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Research Article

New insights into the taxonomy of the *Hylaeus xanthostoma* complex and further additions to the African *Hylaeus* fauna (Hymenoptera, Anthophila, Colletidae)

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Abstract

Within the genus *Hylaeus* subgenus *Deranchylaeus*, from sub-Saharan Africa, a distinctive new subgroup of species is established. The females of this subgroup share a striking character: the orange-coloured lower face, previously known only in *H. xanthostoma*. The inter-specific differences are cryptic in both sexes. Seven species are newly described: *Hylaeus* (*Deranchylaeus*) *aurantiacus* **sp. nov.** ♀♂, *H.* (*D.*) *burundis* **sp. nov.** ♂, *H.* (*D.*) *lyriformis* **sp. nov.** ♂, *H.* (*D.*) *sambiensis* **sp. nov.** ♂, *H.* (*D.*) *portokalius* **sp. nov.** ♂♀, *H.* (*D.*) *diastictus* **sp. nov.** ♂ and *H.* (*D.*) *jemeniticus* **sp. nov.** ♀. This subgroup also includes *H.* (*D.*) *promontorii* (Meade-Waldo, 1923) and *H.* (*D.*) *venustus* Dathe, 2014, whose females are described for the first time. From Cameroon, the male of a second species of the subgenus *Pumilaeus* is described as new: *H.* (*Pumilaeus*) *soukontouai* **sp. nov.** New records of species of the genus *Hylaeus* F. in sub-Saharan Africa are added and a revised identification key to the subgenus *Deranchylaeus* is presented, to include the new species.

Key Words

Deranchylaeus, *Pumilaeus*, identification keys, male terminalia, new species, taxonomy, subgroups, zoogeography

Introduction

In the Afrotropical Region, the mostly small and inconspicuous mask bees of the genus *Hylaeus* remained for many years merely the subject of casual and haphazard observations, until Roy Snelling (1985) compiled an overview of the accumulated data and revised some smaller groups (subgenera). The two most species-rich subgenera, *Deranchylaeus* and *Nothylaeus*, remained unrevised. Systematic investigations were first initiated by Connal Eardley, with the foundation of a South African National Collection of Insects (SANC) at the Agricultural Research Council, Pretoria, South Africa. His projects included a survey of the literature (Eardley and Urban 2010) and the *Deranchylaeus* project in sub-Saharan Africa (Dathe 2014). With Eardley's help, I was able to examine all available material from the major museums in South Africa and compare it with types around the world. As a result, 31 species were identified. Another species was added later (Dathe 2015).

Snelling (1985) had already considered an infrasubgeneric grouping of *Deranchylaeus* species, but he did not define these. Dathe (2014: 11) assigned 21 species to four groups, which he called the *curvicarinatus* group, *tinctulus* group, *melanosoma* group and *dregei* group. In the *curvicarinatus* group, he found two subgroups with four species each, which differed mainly in the punctation of the mesosoma and tergum 1, in the delimitation of the propodeal terminal area and in the shape of the apical lobus of male sternum 8. Work on new *Hylaeus* collections, mainly from East Africa, yielded significant new results, which are here presented. Seven new species were found, which, on closer examination, led to a deeper understanding of a species complex that had already been defined earlier as subgroup 2 of the *curvicarinatus* group.

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Subgroup 2 also includes *Hylaeus xanthostoma* (Alfken), after which the subgroup is here named: in the female, the clypeus and other parts of the lower face including the mouth parts are orange-red, while the corresponding male has a quite conventional white or yellow mask. These females stood out in the entire subgenus *Deranchylaeus* because of this seemingly unique feature. However, after an in-depth examination of new material, it turned out that a number of closely-related species with orange-faced females exist, which differ only in cryptic morphological characters. The taxonomic treatment proved to be difficult, so that, in my opinion, only initial insights could be gained here. Five of the new species are available in only one sex and their collection localities are limited to eastern Africa, from Ethiopia to Burundi. In addition, there is an isolated record from the Arabian Peninsula, in Yemen.

Material and methods

This study is based on African *Hylaeus* newly acquired by the Linz-Dornach Biology Centre (OLML) and collected in Burundi, Cameroon, Congo, Ethiopia, Kenya, Namibia, Nigeria, Senegal, South Africa, Tanzania, Uganda, Zambia and Zimbabwe. Further material was again kindly provided by Alain Pauly (IRSNB/Arusha) and Connal Eardley (SANC/Pretoria). A total of about 450 specimens were studied.

The specimens were conventionally needle-pinned and the terminalia of selected males dissected and photographed. Most of the specimens were returned to the senders and are now in their collections; duplicates were retained in the SDEI collection as voucher specimens.

The collections mentioned are abbreviated as follows:

AMNH	American Museum of Natural History, Smithsonian Institution, New York, USA
BPBM	Bernice P. Bishop Museum Honolulu, Hawaii, USA
IRSNB	Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium
MNHN	Muséum National d'Histoire Naturelle, Paris, France
NHM	Natural History Museum, London, UK
OLML	Oberösterreichisches Landesmuseen, Biologiezentrum, Linz, Austria
SANC	South African National Collection of Insects, Agricultural Research Council Pretoria, South Africa
SDEI	Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany
UMO	Oxford University Museum of Natural History, Oxford, UK
ZMB	Museum für Naturkunde, Leibniz-Institut für Evolutions- und Biodiversitätsforschung, Berlin, Germany

Basically, the morphological terminology of Michener (2007) is applied. Terms with special use in the genus *Hylaeus* are explained in detail in Snelling (1985) and earlier papers by Dathe (2014, 2015, 2022). The indications of strength and relative density of the integument punctation are given according to Dathe (2014: 6). The term "omaulus" (pl. "omauli") is used here to refer to the angle between the anterior and lateral surfaces of the mesepisternum (Michener 2007: 48, fig. 20-5). The following abbreviations are used in the description of new species: **N** – number of specimens examined; **BW:DO** – basal clypeal width to distance to orbit ratio; **CL:CW** – clypeus length to width ratio; **HL:HW** – head length to width ratio; **UFW:LFW** – upper to lower face width ratio; **ScL:ScW** – scape length to width ratio. Measurement data for multiple specimens is presented as a range, with the mean value in parentheses.

The differences between the species of the *xanthostoma* complex are often rather cryptic and cannot be described verbally with sufficient precision. Accordingly, rather than following the usual practice of presenting the illustrations of each newly-described species in a separate plate, here the images of the diagnostically most important body parts – face, mesonotum, metasoma and terminalia – are grouped together, thus making comparison easier. These plates are supplemented by an identification key with references to the respective figures. Note that there are differences in the expression of the clypeus colouration, which can vary between rusty brown and light orange. The term "orange" is uniformly applied here to all these variants, because no transitions to the usual yellow and white colourations were observed.

The specimens were studied with a stereomicroscope Olympus SZX12. Light microscopic images were acquired with Leica Application Suite 4.12 through a Leica DFC450 camera attached to a Leica Z6 APO stereomicroscope or an Olympus BX51 microscope. In case of the Z6 APO, lighting was from the high diffuse dome illumination Leica LED5000 HDI. Composite images with an extended depth of field were created using the software Helicon Focus 8.2.0. Pro.

Results

The *Hylaeus curvicarinatus* species group, *xanthostoma* subgroup

This chapter examines in detail these species defined by Dathe (2014: 11) as subgroup 2 of the *Hylaeus curvicarinatus* group using the following characters: tergum 1 finely punctate, propodeum marginate round, male distal (apical) lobes of sternum 8 small. The fact that the orange colouration of the female clypeus is also an important distinguishing character had not yet been recognised at that time.

Hylaeus (*Deranchylaeus*) *xanthostoma* (Alfken, 1914)

Prosopis xanthostoma Alfken, 1914: 196–197. ♀♂, Belgisch Kongo [DR Congo]. Lectotype ♀, ZMB Berlin.

Hylaeus (*Deranchylaeus*) *xanthostoma* (Alfken): Bridwell (1919: 138–139); Dathe (2014: 74).

Remarks. It took exactly 100 years to study this not uncommon species in detail (Dathe 2014). The supposed special female character, the orange clypeus, is actually not unique at all. The real *H. xanthostoma* belongs to the of *Hylaeus curvicarinatus* species group, subgroup 2 (Dathe 2014: 11); it is, as it were, the "benchmark" for the classification of the species listed here. The most important characters of the male are shown in Fig. 2 (face), 11 (mesosoma), 20 (metasoma) and 29, 45 (terminalia); those of the female in Fig. 47 (face), 53 (mesosoma) and 59 (metasoma).

Hylaeus (*Deranchylaeus*) *aurantiacus* sp. nov.

https://zoobank.org/79F232B9-BF35-4A56-A374-D90912EE7C2C

Diagnosis. Particularly, the female is conspicuous because of its long head accompanied by the extensive orange colouration of the face, which extends also to the supraclypeal area, the scapes, the paraorbital areae and lower areas of the head. The male morphologically closely resembles *H. xanthostoma*, but differs so markedly in the details of the terminalia (Figs 28, 29) that they must be considered to be separate species.

Description. Male. N = 1. Total length 4.2 mm, wing length 3.0 mm.

Head (Fig. 1) in outline short trapezoidal; HL:HW 1.03, UFW:LFW 1.63; only very short and sparsely hairy. Scapes short, compact, barely dilated, ScL:ScW 1.95, mostly yellow, brown above. Flagella very long, yellow, slightly darker above. Foveae faciales placed very high, small. Mask bright sulphur-yellow, weakly shiny; lateral spots reach beyond scape bases, rounded to orbits; clypeus CL:CW 1.41, BW:DO 0.91; flat, distinctly convex only below, surface longitudinally wrinkled with distinct punctation; anterior margin quite narrowly horn-brown. Upper part of supraclypeal area black, shiny, with raised lateral margins, extended above into a broad apex gradually merging into frons. Lower frons grooved in scape area, laterally and above with strong contiguous punctation, arranged in rows of dots; surface shiny. Vertex highly convex, densely and strongly punctate in middle. Facial sides evenly convex, with rounded paraocular margin. Occiput rounded. Genae striate, shiny. Malae distinct, yellow-brown. Labrum and mandibles yellow.

Mesosoma (Fig. 10) normal, black, hardly hairy. Tegulae yellow-spotted, pronotum with tiny pointed spot. Pronotum sharp-edged anteriorly, laterally protruding, angular. Mesonotum and scutellum finely shagreen, silky, with coarse subcontiguous punctation. Mesopleura similarly coarsely, but more shallowly punctate; omauli rounded. Legs black, with whitish-yellow on tibiae I anteriorly, II and III basally and apically; tarsi pale yellow, terminal segment dark. Wings clear, with stigma and veins brown, costa dark. Propodeum coarsely and sharply sculptured, medial area with coarse meshes, interspaces shiny. Terminal area ringed with upturned sharp bars, also coarsely sculptured, shiny; median furrow distinct. Lateral areae also delimited laterally.

Metasoma (Fig. 19) slender and elongate, black. Tergum 1 shagreen with fine sparse punctation; following terga more indistinctly punctate, silky-glossy; depressions barely discernible. Tergum 1 with white lateral fringes. Sterna flat, without markings. Terminalia (Fig. 28): genital capsule compact, elliptic in outline, dorsal view, gonoforcipes apically with rounded apex and long bristles. Penis valves narrow and shorter than gonoforcipes, dorsal view, but (unlike in *H. xanthostoma*) highly convex (Fig. 44). Sternum 7 distally with two long lamellar bristles and one short bristle basally; distal flag distinctly elongate and bearing three short bristles. Proximal lobes distally broadened like a spoon, bearing one slightly longer coarse bristle and rather many fine bristles. Sternum 8 apically short and broad, median cone placed far towards anterior, spiculum elongate.

Female. N = 1. Total length 5.3 mm, wing length 3.5 mm.

Head (Fig. 46) outline conspicuously elongate, pear-shaped, HL:HW 1.06, UFW:LFW 1.41; hairless. Scapes long and slender, orange; flagella yellow below, darkened above, with margins of segments black. Foveae faciales moderately long. Colouration of upper half of head black, clypeus, paraocular areae and supraclypeal area orange, as also genae, malae, labrum and mandibles; only tips of mandibles black. Clypeus CL:CW 1.22, BW:DO 1.48; shallowly impressed area in middle, longitudinally grooved with relatively large shallow punctate pits, silky-glossy. Supraclypeal area similarly sculptured, with raised lateral margins, without median furrow; broad above, merging gradually into frons. Frons with strong subcontiguous rows of dots, surface shiny. Vertex convex, punctation slightly finer and shallower. Sides of face evenly convex, with partly sharp-edged paraocular margin. Genae bevelled, longitudinally wrinkled. Malae dilated. Occiput rounded.

Mesosoma (Fig. 52) elongate and depressed, black, with sparse white bristles below. White spots only on tegulae. Pronotum with sharp anterior edge, sides pointedly protruded. Mesonotum, mesopleura and scutellum shagreen, silky, with strong close punctation. Omauli almost angular. Legs black, only posterior tarsi brown and anterior tibiae and tarsi yellow. Wings clear, with stigma and veins dark brown. Propodeum sharp-edged, medial area basally with fine wrinkles, distally with coarse sharp-edged meshes, interspaces shiny. Terminal area circular with sharp bar, medial groove broad, smooth, sculptured and dull above. Lateral areae sharply delimited posteriorly and laterally, with few white pinnae.

Metasoma (Fig. 58) spindle-shaped, black, weakly shiny. Tergum 1 finely shagreen, punctation very minute,

Figures 1–9. *Hylaeus* (*Deranchylaeus*) species, males. Head, frontal view. **1.** *H.* (*D.*) *aurantiacus* sp. nov.; **2.** *H.* (*D.*) *xanthostoma* (Alfken); **3.** *H.* (*D.*) *burundis* sp. nov.; **4.** *H.* (*D.*) *promontorii* (M.-W.); **5.** *H.* (*D.*) *lyriformis* sp. nov.; **6.** *H.* (*D.*) *sambiensis* sp. nov.; **7.** *H.* (*D.*) *portokalius* sp. nov.; **8.** *H.* (*D.*) *venustus* Dathe; **9.** *H.* (*D.*) *diastictus* sp. nov. Scale bar 0.5 mm.

but relatively dense compared to *H. xanthostoma* (Fig. 59); following terga equally finely sculptured, but punctation nearly disappearing; depressions poorly defined. With distinct white lateral fringe. Terminal fringe pale.

Type material. ***Holotype*** ♀, ETHIOPIA: Sidamo prov., 40 km W Sodo, 1130 m alt., 12.IV.2007. – ***Paratype*** ♂, same collection data. Both leg. J. Halada et coll. OLML.

Etymology. Adjective: aurantiacus (lat.) – red-orange, orange-red.

Hylaeus (*Deranchylaeus*) *burundis* sp. nov.

https://zoobank.org/E1AAE528-D25B-4B0B-8AA3-4EFB14B050D1

Diagnosis. The only available specimen, a male, has an orange-coloured mask, which was previously only known from females of the *H. xanthostoma* subgroup. Characteristic are also the terminalia, especially the open form of the genital capsule (Fig. 33A).

Description. Male. N = 1. Total length 4.65 mm, wing length 3.05 mm.

Head (Fig. 3) almost circular; HL:HW 0.97, UFW:LFW 1.75; only posteriorly hairy. Scapes short, compact, little dilated distally, ScL:ScW 1.75; entirely black. Flagella long, segments slightly less than twice as long as thick, yellow, black above. Foveae faciales very short. Mask reduced, orange, dull; lateral spots abbreviated above, not reaching scape bases, running obliquely to orbits and continued along them as a fine line; clypeus CL:CW 1.50, BW:DO 1.00; surface finely shagreen, punctation shallow and scattered; anterior margin black. Supraclypeal area black, with raised lateral margins, punctate laterally and above, apex expanded and gradually merging into frons. Frons narrowly grooved in scape fields, with wrinkled, strongly punctate stripes above; surface dull. Vertex

convex, also coarsely punctate in middle. Facial sides evenly convex, with rounded paraocular margin. Occiput rounded. Genae striate, dull. Malae distinct, black. Labrum brown, mandibles predominantly black.

Mesosoma (Fig. 12) normal, black, hardly hairy. Tegulae, calli and pronotum black. Pronotum slightly protruded, anterior edge sharp, laterally angular. Mesonotum and scutellum shagreen, dull, with coarse dense punctation. Mesopleura similar, but more shallowly punctate; omauli rounded. Legs black, tibiae I anterior, II and III apically yellow; basitarsi white, other tarsal segments blackened. Wings clear, with stigma brown, costa and veins dark brown. Propodeum coarsely and sharply sculptured, medial area with coarse meshes, interspaces shiny. Terminal area with upturned sharp bars around, also coarsely sculptured, shiny; median furrow distinct. Lateral areae also laterally delimited.

Metasoma (Fig. 21) slender and elongate, black. Tergum 1 shagreen, with scattered minute punctation; following terga more shallowly punctate, silky glossy; depressions barely defined. Tergum 1 without lateral fringes. Sterna planar, shallowly punctate, shiny. Terminalia (Fig. 33), genital capsule shorter than in *H. xanthostoma*, gonoforcipes flattened, but narrower and more acuminate, dorsal view, slightly longer than penis valves; sides with fringe of hairs. Sternum 7 with narrowly elongated distal lobes, "flag" setose with 3 short bristles; proximal part apically broadened, setose with five lamellar bristles, as well as other short bristles. Sternum 8 with prominent keel, apex and spiculum broad.

Type material. ***Holotype*** ♂ (single specimen), BURUNDI: Ruvubu National Park, Ruvubu River, 02°59'S, 30°28'E, 1401 m alt., 06.XI.2010, C. Eardley leg.; coll. SANC Pretoria.

Etymology. The species is named after its country of origin, Burundi (noun in apposition).

Hylaeus (*Deranchylaeus*) *promontorii* Meade-Waldo, 1923

Prosopis longula Friese, 1913: 583. 1 ♂, Rhodesia [Zimbabwe]: Bulawayo. Holotype ZMB Berlin.

Hylaeus (*Deranchylaeus*) *longulus* (Friese): Bridwell (1919: 138, 146–147).

Hylaeus promontorii Meade-Waldo, 1923: nomen novum for *Prosopis longula* Friese, 1913 not *Prosopis longula* Pérez, 1903.

Hylaeus (*Deranchylaeus*) *promontorii* Meade-Waldo: Dathe (2014: 63).

Diagnosis. The female is characterised by an orange mask restricted to the clypeus and lower face; scapes and legs are largely black. Apart from colour characters, the species differs from *H. venustus* and *H. portokalius* by its shorter head and stronger punctation of the mesosoma.

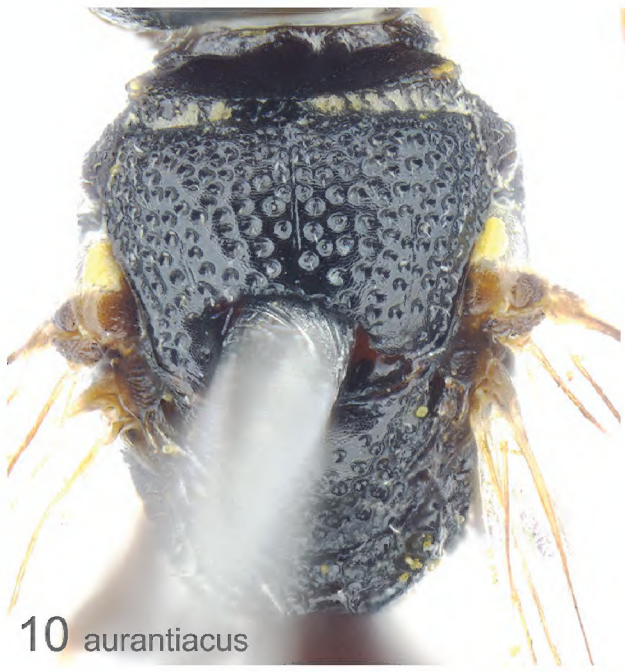
Redescription. Female. N = 10. Total length 4.4–5.2 (4.77) mm, wing length 2.9–3.8 (3.41) mm.

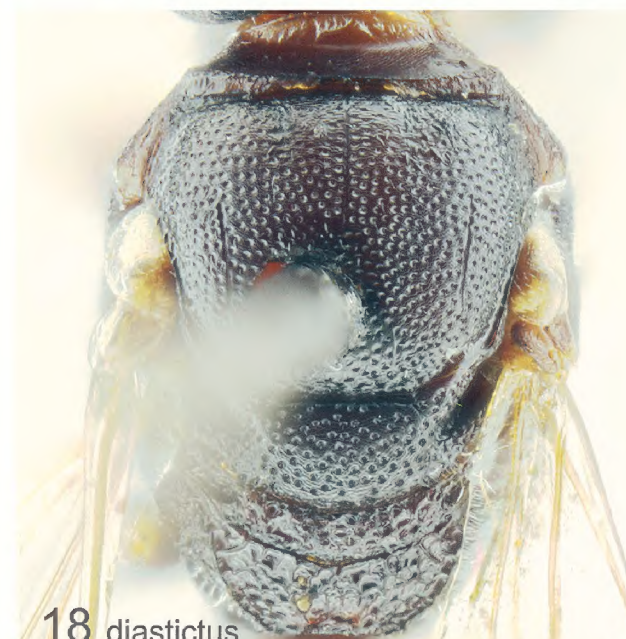
Head outline (Fig. 48) nearly circular, HL:HW 0.99–1.03 (1.01), UFW:LFW 1.51–1.58 (1.55); hairless. Scapes long and slender, black, flagella black above, yellow below. Foveae faciales short. Colouration black, only clypeus and adjacent parts of lower face orange, especially paraocular areae and genae below, malae, labrum and mandibles. Clypeus CL:CW 1.13–1.23 (1.18), BW:DO 1.35–1.59 (1.47); surface longitudinally wavy-grooved with relatively large shallow punctate pits, silky-glossy. Supraclypeal area densely coarsely punctate; with median furrow; broad above, gradually merging into frons. Frons with strong subcontiguous rows of dots, surface not very shiny. Vertex convex, more finely, shallowly and diffusely punctate, dull. Facial sides evenly convex, with angular paraocular margin. Genae bevelled, longitudinally wrinkled and punctate. Malae very narrow. Occiput rounded.

Mesosoma (Fig. 54) normal, black, ventrally and laterally with very short sparse white pubescence. White markings only on tegulae. Pronotum with sharp anterior edge, sides protruding angularly. Mesonotum, mesopleura and scutellum dull, shagreen, with moderate sparse punctation. Omauli rounded. Legs black, only terminal tarsi brown and anterior tibiae with yellow stripe. Wings clear, with stigma and veins black. Propodeum sharp-edged, medial area sloping, basally with fine, distally with coarse sharp-edged meshes, interspaces shiny. Terminal area circular with sharp bar, medial groove broad, smooth, dully sculptured above. Lateral areae sharply delimited posteriorly and laterally, with white pinnae.

Metasoma (Fig. 60) spindle-shaped, black. Tergum 1 shagreen, the very scattered minute punctation barely visible in sculpture; following terga equally finely sculptured, punctation disappearing; depressions poorly defined. With narrow white lateral fringes. Terminal fringe pale.

Distribution. South Africa, Zimbabwe, DR Congo, Nigeria, Kenya, Mozambique. — New records: ETHIOPIA: 1 ♀, Sidamo prov., 50 km NE Yabello, 1540 m alt., 22.IV.2007; 2 ♀♀, Shewa prov., lake Lango, 29–30.IV.2007; 2 ♀♀, 20 km SE Konso, 05°15'N, 37°32'E, 850 m alt., 11.–13.V.2015; J. Halada leg. – TANZANIA: 7 ♂♂, 5 ♀♀, Morogoro prov., 50 km SW Morogoro, 06°50'S, 37°15'E, 450 m alt., 12.I.2007; 2 ♀♀, Shinyanga prov., 10 km NWW Kahama, 03°25'S, 31°47'E, 1200 m alt., 24.XII.2006; J. Halada leg. – MOZAMBIQUE: 1 ♂, Manicata prov., 70 km SE Chimoio, 23–24.XII.2003; J. Halada leg.; 5 ♂♂, 4 ♀♀, 8 km SW Vila Franca Save, 21.203°S, 34.507°E, 24.II.2020; 1 ♂, 15 km W Boane, 26.050°S, 32.229°E, 27.II.2020, M. Halada leg. – SOUTH AFRICA: 9 ♂♂, 4 ♀♀, KwaZulu-Natal, Hluhluwe 4 km S, 28°03'S, 32°16'E, 120 m alt., 20.XII.2019, J. Halada leg.; 1 ♀ Eastern Cape, Graeff – Reinet – Nieu – Bethesda, 28.I.2001; 1 ♀, Maputoland, SW of Emanguzi, 29.I.2003, M. Snižek leg. – NAMIBIA: 2 ♂♂, Otjozondjupa, 15 km NE Okahandja, 21°49'S, 16°58'E, 1480 m alt., 13.03.2014; 1 ♂, Kunene, 50 km NEE Khorixas, 20°51'S, 15°24'E, 1133 m alt., 24.III.2017; 2 ♂♂, Omaheke, 35 km W Gobabis, 22°23'S, 18°39'E, 1483 m alt., 07.IV.2017; 1 ♂, Khomas, 60 km NW Dordabis, 22°37'S, 18°07'E, 1500 m alt., 07.IV.2017; all J. Halada leg. – ZAMBIA NW: 3 ♂♂,





Figures 10–18. *Hylaeus* (*Deranchylaeus*) species, males. Mesosoma, dorsal view. **10.** *H.* (*D.*) *aurantiacus* sp. nov.; **11.** *H.* (*D.*) *xanthostoma* (Alfken); **12.** *H.* (*D.*) *burundis* sp. nov.; **13.** *H.* (*D.*) *promontorii* (M.-W.); **14.** *H.* (*D.*) *lyriformis* sp. nov.; **15.** *H.* (*D.*) *sambiensis* sp. nov.; **16.** *H.* (*D.*) *portokalius* sp. nov.; **17.** *H.* (*D.*) *venustus* Dathe; **18.** *H.* (*D.*) *diastictus* sp. nov. Scale bar 0.5 mm.

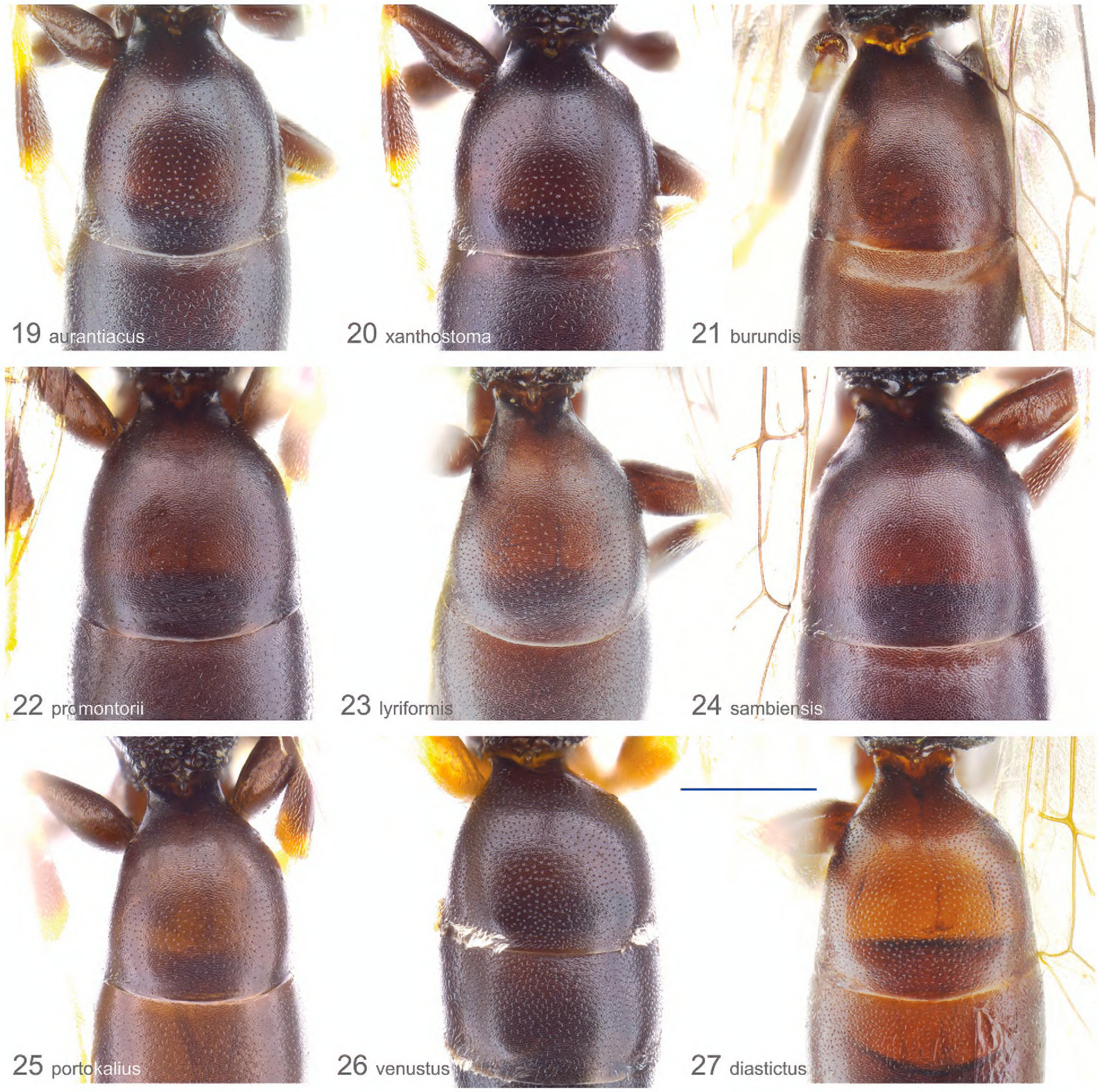
1 ♀, 40 km W Chingola, 12°27'S, 27°35'E, 1200 m alt., 07.XI.2005; 2 ♂♂, 100 km W Solwezi, 12°13'S, 25°39'E, 1400 m alt., 10.XI.2005; M. Halada leg. – ZIMBABWE: 1 ♂, Bubi env., Bubi river, 08.XII.1998, S. Bečvář et al. leg. All in coll. OLML. First records for Ethiopia, Tanzania, Namibia, Zambia and Zimbabwe.

Remarks. The data on the female of *H. promontorii* in Dathe (2014: 63, 18) are at least incomplete, only three specimens were available for study at that time. It therefore seems appropriate to give a more detailed description here.

***Hylaeus* (*Deranchylaeus*) *lyriformis* sp. nov.**

https://zoobank.org/51218B7B-92A9-4174-838C-B1F13F945C25

Diagnosis. The striking and unique character is the excessive development of the distal lobus of the S7, which is lyre-shaped. The black scape with clearly demarcated apex spot is reminiscent of *H. promontorii*, but the gonoforcipes of the genital capsule are much moreslender. The mask is bright lemon yellow. The female is unknown.

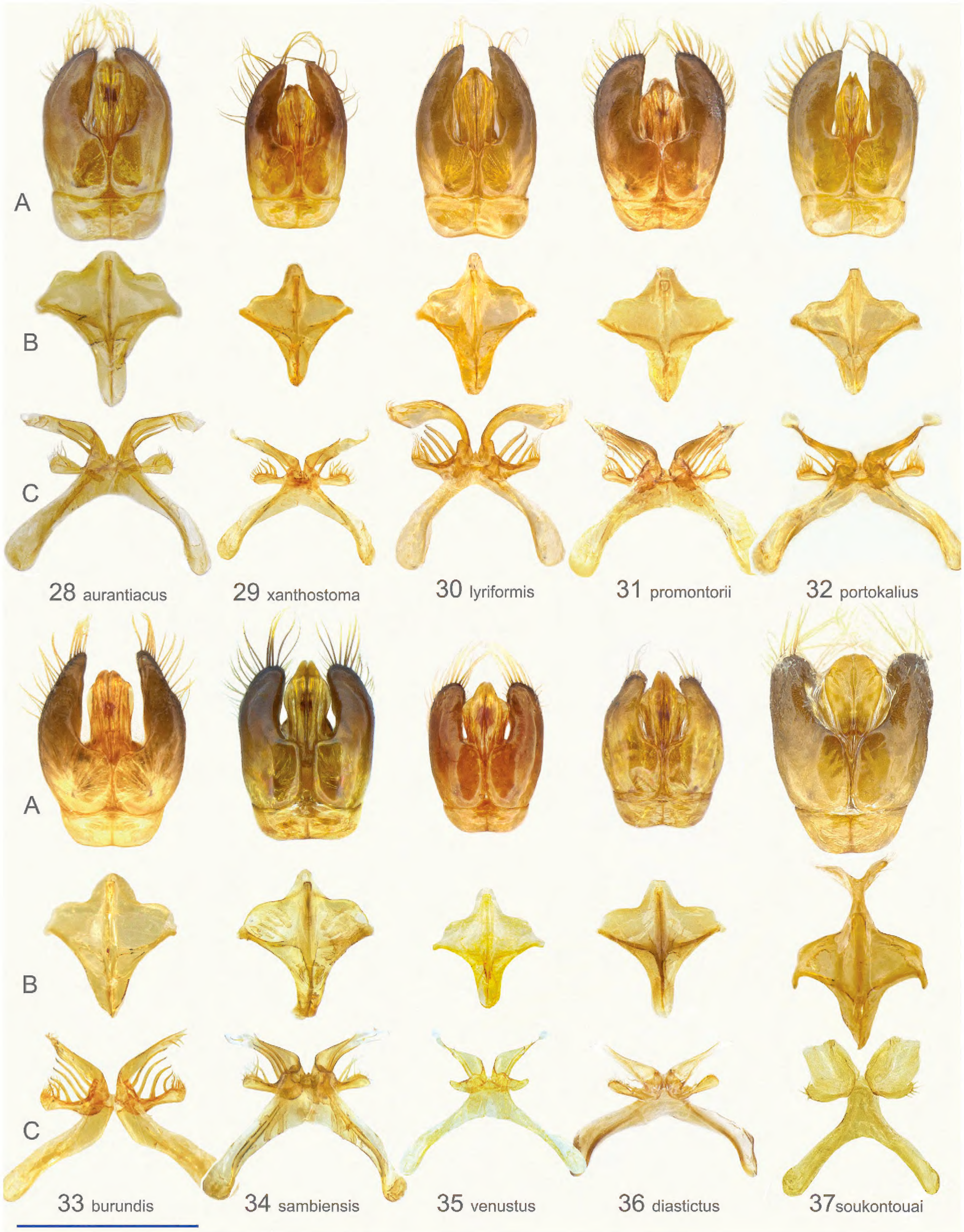


Figures 19–27. *Hylaeus* (*Deranchylaeus*) species, males. Metasoma base, dorsal view. **19.** *H.* (*D.*) *aurantiacus* sp. nov.; **20.** *H.* (*D.*) *xanthostoma* (Alfken); **21.** *H.* (*D.*) *burundis* sp. nov.; **22.** *H.* (*D.*) *promontorii* (M.-W.); **23.** *H.* (*D.*) *lyriformis* sp. nov.; **24.** *H.* (*D.*) *sambiensis* sp. nov.; **25.** *H.* (*D.*) *portokalius* sp. nov.; **26.** *H.* (*D.*) *venustus* Dathe; **27.** *H.* (*D.*) *diastictus* sp. nov. Scale bar 0.5 mm.

Description. Male. N = 2. Total length 4.3–4.4 (4.35) mm, wing length 2.9–3.1 (2.98) mm.

Head piriform (Fig. 5); HL:HW 1.04–1.05 (1.05), UFW:LFW 1.63–1.69 (1.66); only posteriorly hairy. Scapes short, compact, little expanded distally, ScL:ScW 1.68–1.73 (1.70); black with whitish-yellow apical spot. Antennal flagella long, segments weakly saw-like, nodular distally, about twice as long as wide, yellow, darkened above. Foveae faciales absent. Mask pale yellow, weakly shiny; lateral spots extending above scape bases, tongue-like; clypeus CL:CW 1.46–1.50 (1.48), BW:DO 0.79–0.84 (0.82); surface finely shagreen, punctation shallow and scattered, barely visible amongst sculpture; anterior margin narrowly horn-brown. Supraclypeal area with raised lateral margins, without dots above, extended into a point gradually merging into frons. Frons with scape fields grooved, outwardly and above wrinkled stripes of punctures, to median ocellus with separated dots; surface shiny. Vertex highly convex, shallowly punctate in middle. Facial sides evenly convex, with rounded paraocular margin. Occiput rounded. Genae striate, shiny. Malae distinct, horn-brown. Labrum and mandibles light yellow like mask.

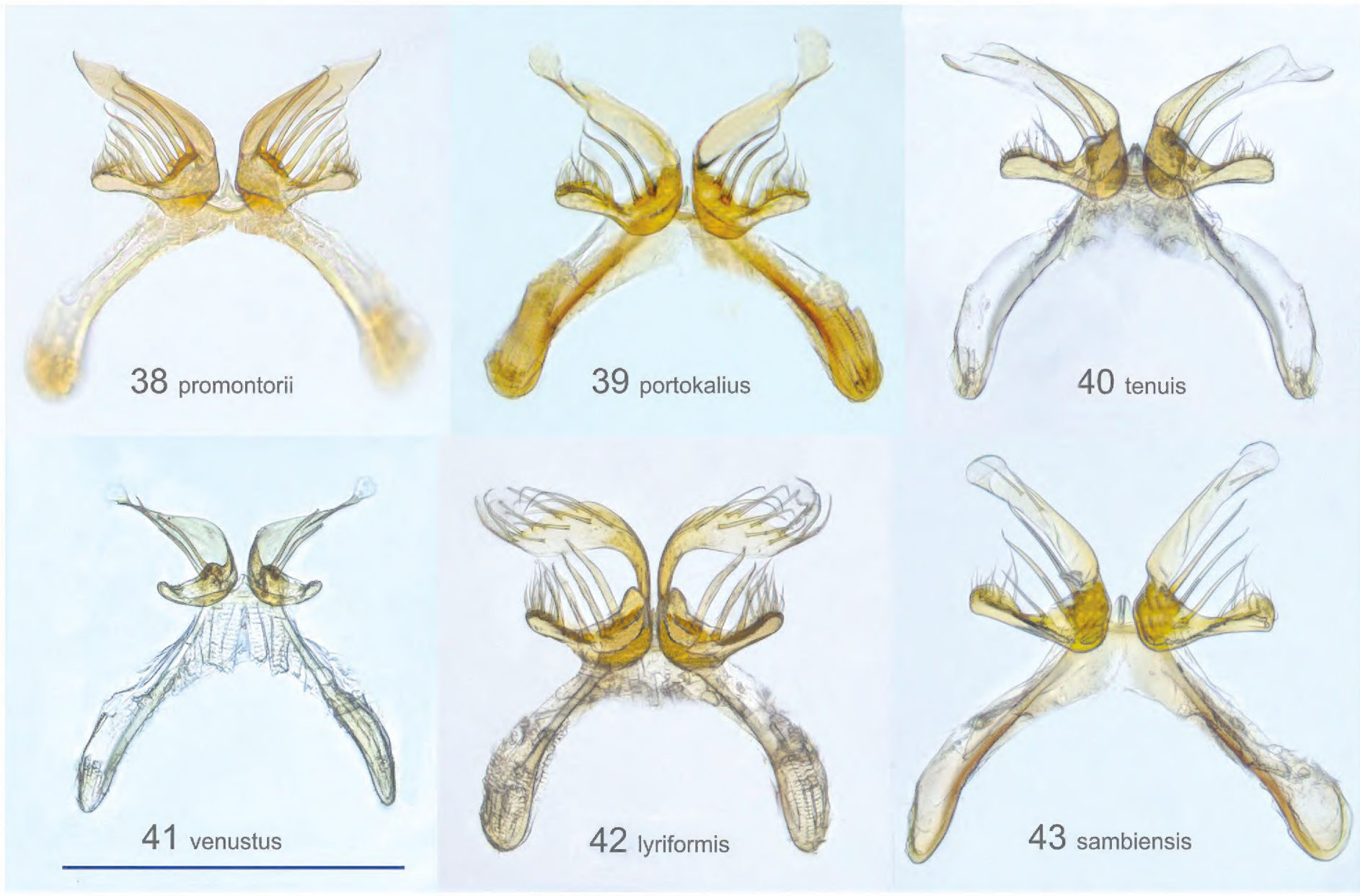
Mesosoma (Fig. 14) normal, black, hardly hairy. Only tegulae yellow-white marked, calli and pronotum black. Pronotum slightly prolongated, anterior edge sharp, laterally angular. Mesonotum and scutellum shagreen, dull, with coarse dense punctation. Mesopleura less strongly and more shallowly punctate; omauli rounded. Legs black, with white colouration on tibiae I anteriorly, II and III basally and apically; basitarsi and other tarsomeres



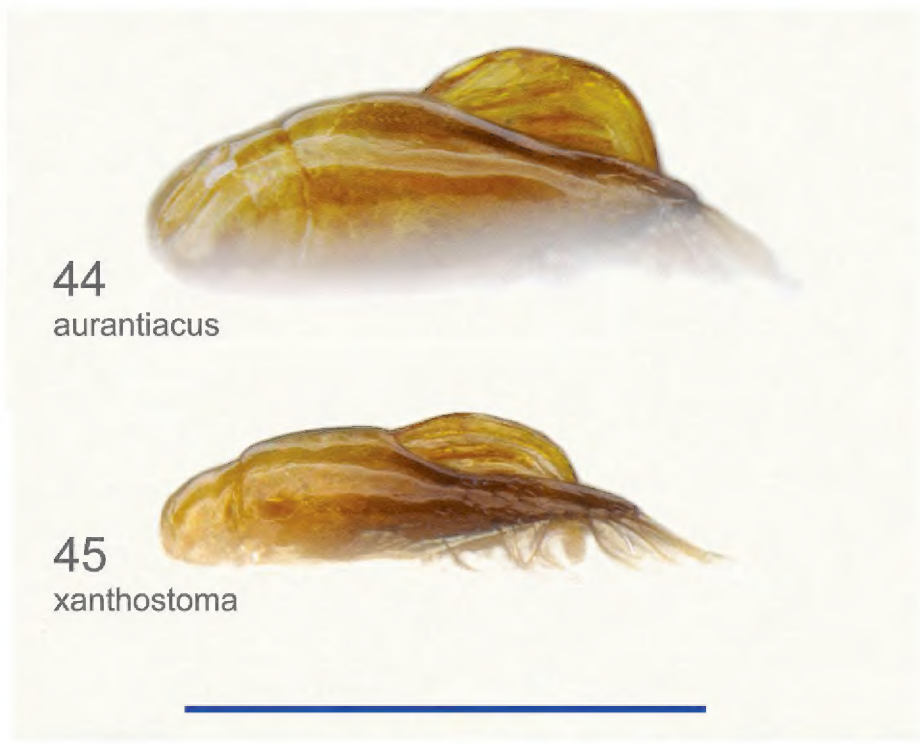
Figures 28–37. 28–36. *Hylaeus* (*Deranchylaeus*) species, males. Terminalia. **28.** *H.* (*D.*) *aurantiacus* sp. nov.; **29.** *H.* (*D.*) *xanthostoma* (Alfken); **30.** *H.* (*D.*) *lyriformis* sp. nov.; **31.** *H.* (*D.*) *promontorii* (M.-W.); **32.** *H.* (*D.*) *portokalius* sp. nov.; **33.** *H.* (*D.*) *burundis* sp. nov.; **34.** *H.* (*D.*) *sambiensis* sp. nov.; **35.** *H.* (*D.*) *venustus* Dathe; **36.** *H.* (*D.*) *diastictus* sp. nov. **37.** *Hylaeus* (*Pumilaeus*) *soukontouai* sp. nov., terminalia. Rows: **A.** Genital capsule; **B.** Sternum 8; **C.** Sternum 7. Scale bar 0.5 mm.

entirely pale. Wings clear, with stigma brown, costa and veins dark brown. Propodeum coarsely and sharply sculptured, medial area with coarse meshes, interspaces shiny. Terminal area bordered by upturned sharp ridges, also coarsely sculptured, shiny; median furrow distinct. Lateral areae also delimited laterally.

Metasoma (Fig. 23) slender and elongate, black. Tergum 1 shagreen, with sparse to close minute punctation;



Figures 38–43. *Hylaeus* (*Deranchylaeus*) species, males. Sternum 7, visualisation in transmitted light microscope with phase contrast. **38.** *H.* (*D.*) *promontorii* (M.-W.); **39.** *H.* (*D.*) *portokalius* sp. nov.; **40.** *H.* (*D.*) *tenuis* (Alfken); **41.** *H.* (*D.*) *venustus* Dathe; **42.** *H.* (*D.*) *lyriformis* sp. nov.; **43.** *H.* (*D.*) *sambiensis* sp. nov. Scale bar 0.5 mm.



Figures 44–45. *Hylaeus* (*Deranchylaeus*) species, males. Genital capsule, lateral view. **44.** *H.* (*D.*) *aurantiacus* sp. nov.; **45.** *H.* (*D.*) *xanthostoma* (Alfken). Scale bar 0.5 mm.

following terga more finely and shallowly punctate, silky glossy; depressions defined. Tergum 1 without lateral fringes. Sterna planar, indistinctly punctate, shiny. Terminalia (Fig. 30): genital capsule similar to *H. promontorii*, gonoforcipes long and flattened, but narrower and distinctly longer than penis valves; sides with graded hair crest. Sternum 7 characteristic (Fig. 42): lobes almost circular in outline, distal part strongly elongate and broadened ("flag"), its surface covered with 8 to 10 short bristles; basal part narrower and shorter, bearing four lamellar bristles and other short bristles, giving the shape of a "lyre". Sternum 8 with raised keel, spiculum elongate and curved.

Type material. ***Holotype*** ♂, ETHIOPIA: Sidamo prov., near Bitata, 1480 m alt., 27.IV.2007, J. Halada leg.; coll. OLML. – ***Paratype*:** 1 ♂, ETHIOPIA S: Sof Umer, 06°54'N, 40°51'E, 1200 m alt., 30–31.V.2015, J. Halada leg.; coll. SDEI.

Etymology. New Latin, from lyra (lute, lyre) +♂forma (form, shape) – shaped like a lyre (adjectival).

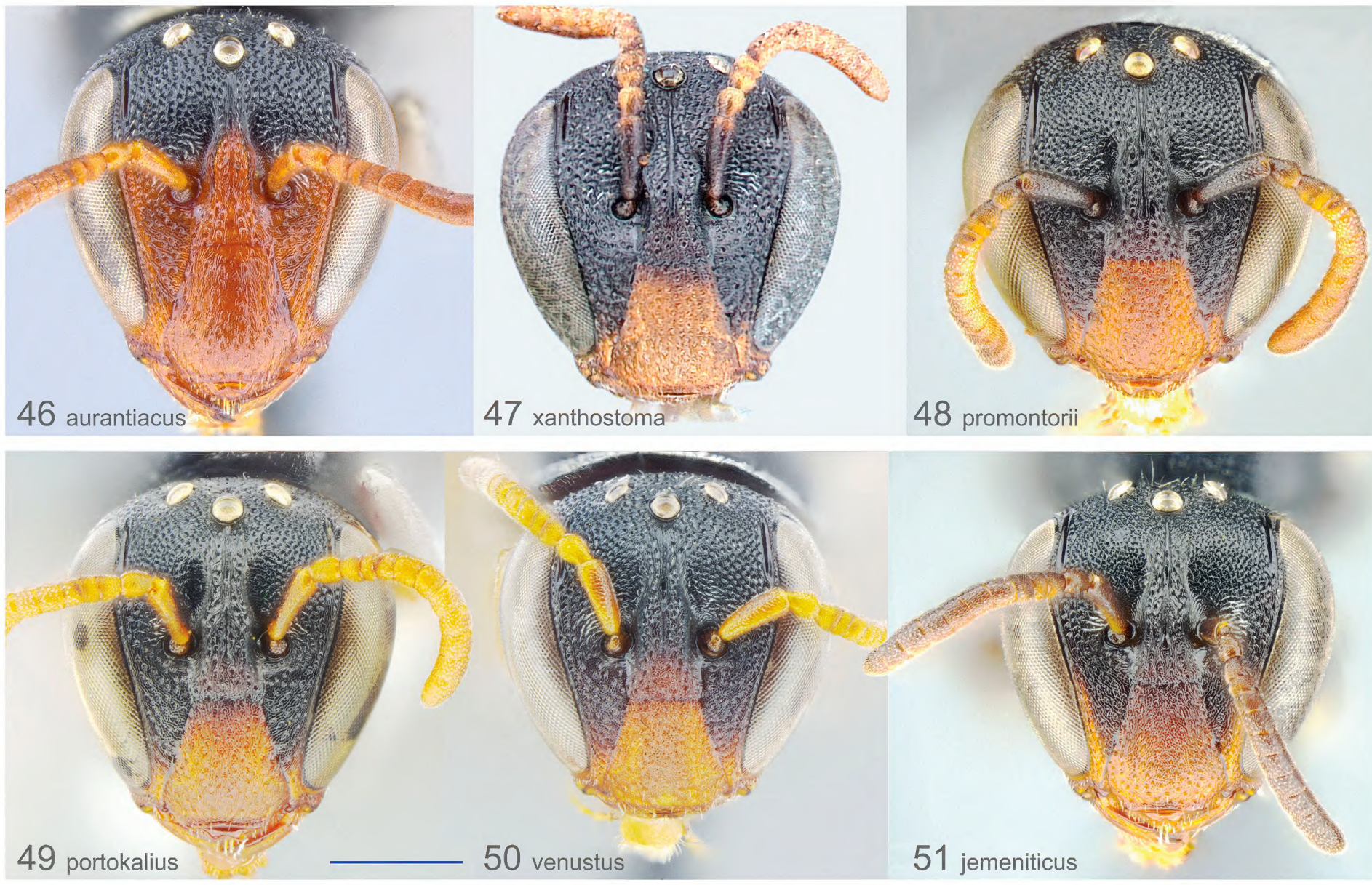
Hylaeus (*Deranchylaeus*) *sambiensis* sp. nov.

https://zoobank.org/067BE456-6E98-4B3F-BF73-8AAC35184863

Diagnosis. The punctation of the thorax is similarly coarse to *H. xanthostoma*, but the mask is white, the mouthparts black. The species stands somewhat apart because of the rounded shape of the gonoforcipes (Fig. 34A).

Description. Male. N = 2. Total length 4.55–4.65 (4.60) mm, wing length 3.10 mm.

Head nearly circular (Fig. 6); HL:HW 0.99–1.00 (0.99), UFW:LFW 1.52–1.35 (1.33); pubescence very short and sparse. Scapes short, compact, little expanded, ScL:ScW 1.75–1.91 (1.83), entirely black. Flagella normal in length, yellow, dark above. Foveae faciales placed high, small. Mask ivory, weakly shiny; lateral spots reach above scape bases, tapering to orbits; clypeus CL:CW 1.32–1.35 (1.33), BW:DO 0.97–1.06 (1.01); distinctly



Figures 46–51. *Hylaeus* (*Deranchylaeus*) species, females. Head, frontal view. **46.** *H.* (*D.*) *aurantiacus* sp. nov.; **47.** *H.* (*D.*) *xanthostoma* (Alfken); **48.** *H.* (*D.*) *promontorii* (M.-W.); **49.** *H.* (*D.*) *portokalius* sp. nov.; **50.** *H.* (*D.*) *venustus* Dathe; **51.** *H.* (*D.*) *jemeniticus* sp. nov. Scale bar 0.5 mm.

convex, especially apically, surface shagreen, punctation flat; anterior margin horn-brown. Supraclypeal area sometimes entirely black, with raised lateral margins, punctation shagreen, extended above into a broad apex gradually merging into frons. Scape fields of frons grooved, towards edges and above with strong close punctation arranged in rows; surface shagreened, barely shiny. Vertex highly convex, densely and strongly punctate in middle. Sides of face evenly convex, with rounded paraocular margin. Occiput rounded. Genae striate, shiny. Malae narrow. Labrum and mandibles brown; in one specimen, mandibles white spotted basally.

Mesosoma (Fig. 15) somewhat depressed, black, hardly hairy. Tegulae white-flecked, one specimen with spots also on calli and pronotum. Pronotum sharply in middle, angularly protruding laterally. Mesonotum and scutellum finely shagreen, dull, with strong close punctation. Mesopleura likewise coarsely punctate; omauli rounded. Legs black, with white-yellow on tibiae I anteriorly, II and III basally and apically; tarsi white, terminal phalanx dark. Wings clear, with stigma brown, costa and veins dark brown. Propodeum coarsely and sharply sculptured, medial area with coarse meshes, interspaces shiny. Terminal area surrounded by upturned sharp bars, also coarsely sculptured, shiny; median furrow distinct. Lateral areae laterally delimited.

Metasoma (Fig. 24) slender and elongated, black. Tergum 1 shagreen, very minute scattered punctation barely perceptible; following terga only shagreen, silky-glossy; depressions barely defined. Tergum 1 without lateral fringes. Sterna flat, without markings. Terminalia (Fig. 34); genital capsule inconspicuous, elliptic in outline, dorsal view, gonoforcipes rounded and with long bristles on distal outer margin. Penis valves narrow and of same length as gonoforcipes in dorsal view. Sternum 7 with four large lamellar bristles without hooks distally (Fig. 43); distal flag distinctly elongate and bearing a stout short bristle. Proximal lobe widened distally like a spoon and bearing shorter bristles. On sternum 8, median peg far distant from narrow distal tip; spiculum elongate and curved.

Type material. ***Holotype*** ♂, ZAMBIA NW: Solwezi 100 km W, 12°13'S, 25°39'E, 1400 m alt., 10.XI.2005, M. Halada leg., coll. OLML. Paratype 1 ♂, same data, coll. SDEI.

Etymology. Named after the country of origin, Zambia (latinised, adjectival).

Hylaeus (*Deranchylaeus*) *portokalius* sp. nov.

https://zoobank.org/7209A261-A992-4091-B4C2-7838A2132AFB

Diagnosis. Species from the species group of *Hylaeus curvicarinatus*, subgroup 2. The species is intermediate in colouration between *H. promontorii* and *H. venustus*, from each of which it differs only in subtle characters,

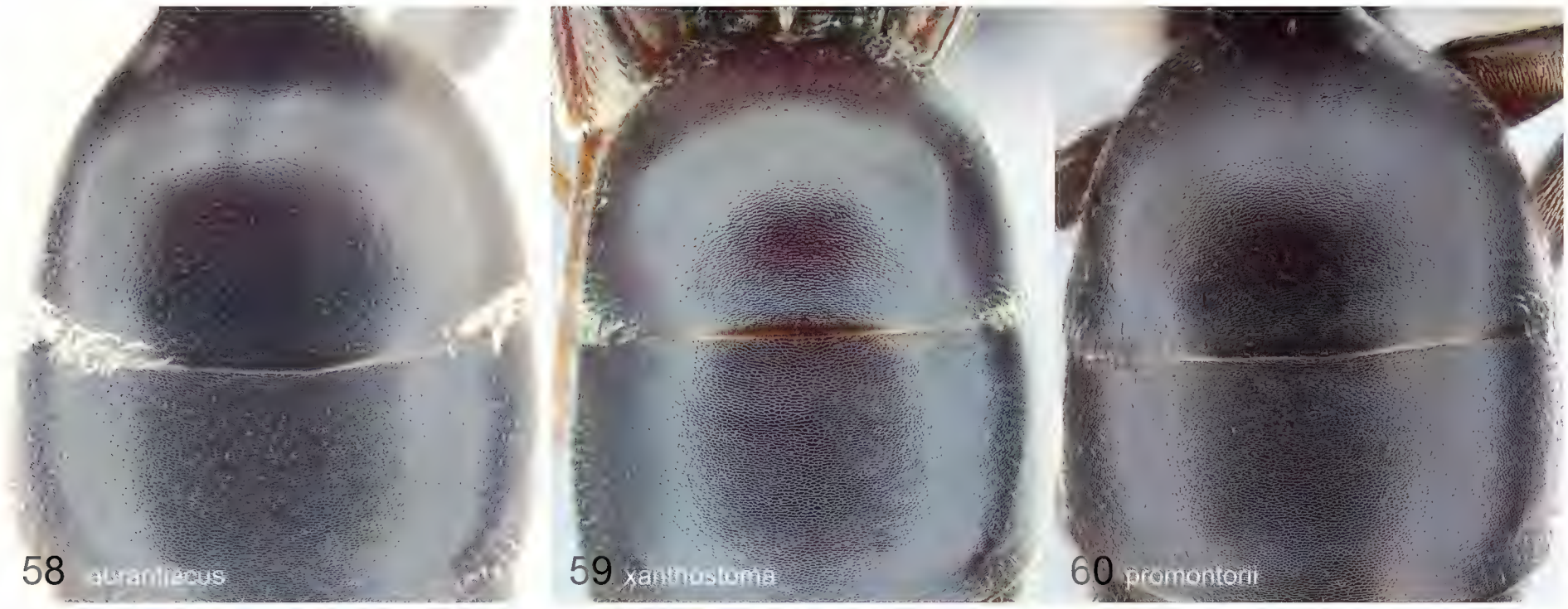
Figures 52–57. *Hylaeus* (*Deranchylaeus*) species, females. Mesosoma, dorsal view. **52.** *H.* (*D.*) *aurantiacus* sp. nov.; **53.** *H.* (*D.*) *xanthostoma* (Alfken); **54.** *H.* (*D.*) *promontorii* (M.-W.); **55.** *H.* (*D.*) *portokalius* sp. nov.; **56.** *H.* (*D.*) *venustus* Dathe; **57.** *H.* (*D.*) *jemeniticus* sp. nov. Scale bar 0.5 mm.

especially in females. However, this study is based on a series collected in parallel, which support a distinction. Except in colour characters, *H. portokalius* differs from both species by its longer head and finer punctation of the mesosoma. The males are recognisable by their short scapes (ScL:ScW 1.5 vs. 1.8 in *H. promontorii*); in the females, the orange colouration is restricted to the lower part of the head; scapes and femora are extensively black.

Description. Male. N = 10. Total length 4.0–4.4 (4.22) mm, wing length 2.6–2.8 (2.73) mm.

Head trapezoidal (Fig. 7); HL:HW 1.02–1.05 (1.03), UFW:LFW 1.67–1.72 (1.69); only very short and sparsely hairy. Scapes short, compact, little expanded, ScL:ScW 1.45–1.61 (1.53); black with large yellow wedge-shaped marking. Flagella very long, yellow, darkened above. Foveae faciales placed very high, very small. Mask bright lemon-yellow, weakly shiny; lateral spots extending above scape bases, truncate; clypeus CL:CW 1.42–1.52 (1.47), BW:DO 0.82–0.98 (0.90); on surface shagreen, scattered punctation barely visible in between sculpture and intense colouration; anterior margin horn brown. Supraclypeal area with raised lateral margins, punctation shining, extended above into a cusp gradually merging into frons. Frons in scape fields grooved, outward and above with strong close punctation, merging into rows of dots; surface shagreen, but shiny. Vertex convex, densely punctate in middle. Sides of face evenly convex, with rounded paraocular margin. Occiput rounded. Genae striate, shiny. Malae distinct, horn-brown. Labrum and mandibles light yellow like mask.

Mesosoma (Fig. 16) normal, black, hardly hairy. Yellow spots on calli and tegulae, on pronotum small or absent. Pronotum sides not protruding, bevelled. Mesonotum and scutellum shagreen, dull, with moderate sparse punctation. Mesopleura distinctly more finely and shallowly punctate; omauli rounded. Legs black, with white-yellow colouration on tibiae I anteriorly, II and III basally and apically; basitarsi and other tarsomeres entirely pale. Wing membranes clear, stigma light brown, costa and veins dark brown. Horizontal part of propodeum transversely strongly depressed; medial area with coarse wrinkled meshes, interspaces shiny. Terminal area



Figures 58–63. *Hylaeus* (*Deranchylaeus*) species, females. Metasoma base, dorsal view. **58.** *H.* (*D.*) *aurantiacus* sp. nov.; **59.** *H.* (*D.*) *xanthostoma* (Alfken); **60.** *H.* (*D.*) *promontorii* (M.-W.); **61.** *H.* (*D.*) *portokalius* sp. nov.; **62.** *H.* (*D.*) *venustus* Dathe; **63.** *H.* (*D.*) *jemeniticus* sp. nov. Scale bar 0.5 mm.

surrounded by upturned sharp bars, finely sculptured, shiny. Lateral areae also laterally demarcated.

Metasoma (Fig. 25) slender and elongate, black. Tergum 1 shagreen, with sparse minute punctation; following terga more finely and shallowly punctate, silky-glossy; depressions scarcely defined. Tergum 1 usually possessing narrow white lateral, often barely visible fringes. Sterna planar, without markings.

Terminalia (Fig. 32) very similar to those of *H. promontorii*, the genital capsules of both species being especially characteristic by their outline elliptical in dorsal view and gonoforcipes with a flat, cup-like shape. Gonoforcipes internally parallel and distinctly longer than penis valves, bearing a graded ring of hairs on free apical sides, instead of a tuft of bristles at tip. Sternum 7 with four large lamellar bristles with hooks distally (Fig. 39); lamellae may be broken off and, thus, appear fewer in number in some individuals (Fig. 32). Proximal lobe widened distally in spoon-like shape bearing six shorter bristles. Median cone of sternum 8 far outward to distal tip; spiculum elongate and curved.

Female. N = 7. Total length 4.4–5.0 (4.64) mm, wing length 3.0–3.4 (3.16) mm.

Head elongated trapezoidal (Fig. 49); HL:HW 1.02–1.09 (1.05). UFW:LFW 1.52–1.58 (1.55), hairless. Scapes long and slender, predominantly black, with yellow longitudinal stripes, proximal segment black; flagella black above, yellow below. Foveae faciales short. Colouration black, clypeus CL:CW 1.11–1.26 (1.19), BW:DO 1.29–1.43 (1.36) partly orange; all distal parts of lower face, such as paraocular areae and genae, as well as malae, labrum and mandibles, orange. Clypeus surface longitudinally wavy-grooved with large shallow punctate pits, silky-glossy. Supraclypeal area densely shallowly punctate; with median furrow, broad above gradually merging into frons. Frons with moderate dense punctation, surface shiny. Vertex convex, with finer, shallower and more scattered punctation, dull. Sides of face evenly convex, with angular paraocular margin. Occiput rounded. Genae bevelled, longitudinally wrinkled and punctate. Malae narrow.

Mesosoma (Fig. 55) normal, black, ventrally and laterally with extremely short sparse white pubescence. White markings only on tegulae. Pronotum with sharp anterior edge, sides angularly protruding. Mesonotum, mesopleura and scutellum dull, shagreen, with moderate sparse punctation. Omauli rounded, ventrally angular. Femora black,

tibiae and tarsi yellow, often partly blackened. Wing membranes clear, stigma and veins dark brown. Propodeum sharp-edged, medial area sloping, basally with fine, distally coarse sharp-edged meshes, interspaces shiny. Terminal area circular with sharp bar, medial groove broad, smooth, dully sculptured above. Lateral areae sharply bordered posteriorly and laterally, with short white hairs.

Metasoma (Fig. 61) spindle-shaped, black. Tergum 1 shagreen, with sparse minute punctation; white lateral fringes narrow. Following terga equally finely sculptured, punctation disappearing. Depressions not well defined. Terminal fringe pale.

Type material. 17 ♂♂, 7 ♀♀. ***Holotype*** ♂, ETHIOPIA: Sof Umer, 06°54'N, 40°51'E, 1200 m alt., 30–31.V.2015, J. Halada leg., coll. OLML. — ***Paratypes*** 16 ♂♂, 7 ♀♀: ETHIOPIA: 1 ♂, 1 ♀ Sidamo prov., near Bitata, 1480 m alt., 27.IV.2007; 1 ♀ 10 km NW Mega, 04°08'N, 38°16'E, 1670 m alt., 24.V.2015; 1 ♂ Wachile env., 04°32'N, 39°03'E, 1070 m alt., 30–31.V.2015; 3 ♂♂, 5 ♀♀ Sof Umer, 06°54'N, 40°51'E, 1200 m alt., 30–31.V.2015; J. Halada leg. – KENYA: 1 ♂ Tata Hills, Voi nr., 14.IV.2007; 1 ♂ Voi env. (Tsavo), 08–18.XI.1996; 1 ♂ 22.XI.–02.XII.1996; 1 ♂ 23.III.–04.IV.1997; 3 ♂♂ 11.–14.IV.1997; 4 ♂♂ Mwingi, Kangonde wadi, 18.IV.2007, M. & M. Halada leg. – In coll. OLML and SDEI.

Excluded from types: SENEGAL: 10 ♂, Dakar, 18.VII.2004, M. Halada leg. First record for Senegal.

Etymology. The species belongs to the group of females with an orange mask; πορτοκάλι (modern Greek) – orange (latinised, adjectival).

Hylaeus (*Deranchylaeus*) *venustus* Dathe, 2014, female new

Hylaeus (*Deranchylaeus*) *venustus* Dathe, 2014: 73–74. ♂, Kenya. Holotype OLML Linz.

Diagnosis. It is the brightest form in the group; ♂ with bright yellow mask (Fig. 8), entirely yellow antennae and legs. ♀ with extensively orange colouration: scapes, antennae and legs entirely orange. Punctation of mesosoma distinctly weaker than in *H. promontorii* and *H. portokalius* (Figs 54–56).

Description. Female. N = 10. Total length 4.2–4.9 (4.53) mm, wing length 2.7–3.1 (2.97) mm.

Head outline round-cordate (Fig. 50), HL:HW 1.01–1.04 (1.02), UFW:LFW 1.43–1.53 (1.48); scarcely hairy. Scapes long and slender, light brown from basal segment, flagella yellow below, slightly darker above. Foveae faciales short. Mask orange: in addition to entire clypeus, mouthparts, lower face and often base of supraclypeal area and sides of face pale; clypeus sometimes with yellow spot below. Clypeus CL:CW 1.16–1.27 (1.21), BW:DO 1.32–1.38 (1.35); surface longitudinally wavy-grooved with relatively large shallow punctate pits, silky-glossy. Supraclypeal area with densely large punctation; with median furrow, apex broad, gradually merging into frons. Frons flat, strongly subcontiguously punctate, satiny. Vertex convex, punctation slightly finer and more scattered, not very shiny. Facial sides evenly convex, with angular paraocular margin. Genae bevelled, longitudinally wrinkled and punctate. Malae very narrow. Occiput rounded. Labrum and mandibles yellow.

Mesosoma (Fig. 56) normal, black, ventrally and laterally with short sparse white pubescence. White spots only on tegulae and (rarely) calli. Pronotum with sharp anterior edge, sides acutely protruding. Mesonotum, mesopleura and scutellum dull, shagreen, with fine close punctation. Omauli rounded. Legs yellow to brown along whole length, rarely femora dark, bases of tibiae sometimes spotted with white. Wing membranes clear; stigma, costa and veins light brown. Propodeum sharp-edged; medial area with distinct horizontal part, basally with fine, distally with coarse sharp-edged meshes, interspaces shiny. Terminal area circular with sharp bar, medial groove broad, smooth, dully sculptured above. Lateral areae sharply defined posteriorly and laterally, with short white pinnae.

Metasoma (Fig. 62) spindle-shaped, black. Tergum 1 shagreen, with minute sparse punctation; following terga more finely sculptured, punctation barely visible; depressions not well defined. With narrow white lateral fringe. Terminal fringe pale.

Distribution. Kenya. — New records: KENYA: 1 ♀ Voi env., Tsavo, 8–18.XI.1996; 6 ♂♂, 4 ♀♀ ibid. 23.III.–4.IV.1997; 2 ♂♂, 8 ♀♀ ibid., 11–14.IV.1997; 4 ♀♀ ibid., 16.V.2007; 6 ♂♂, 4 ♀♀ E Mwingi, Kangonde wadi, 18.IV.2007, all M. Halada leg.; 1 ♀ Nguni, N of Ngomeni, 27.IV.2008, M. Snížek leg. — All coll. OLML and coll. SDEI.

Hylaeus (*Deranchylaeus*) *diastictus* sp. nov.

https://zoobank.org/FC24FF15-B4FA-4212-82AB-5B6922549A22

Diagnosis. Unlike most other species of the subgroup, the mesonotum is densely and finely punctate. The short, compact genital capsule with the separated, short-spatulate ends of the gonoforcipes has some resemblance to *Hylaeus tenuis*, whose mesosoma, however, is much more strongly punctate.

Description. Male. N = 1. Total length 4.20 mm, wing length 2.9 mm.

Head (Fig. 9) long trapezoidal (HL:HW 1.05, UFW:LFW 1.68); hairy on posterior side only. Scape very slender, short (ScL:ScW 1.95), narrower than flagella; black, lightened apically. Flagella normal, segments about 1.5 times longer than their diameter, offset like a saw; yellow, slightly darker above. Foveae faciales minute. Mask complete, white: lateral spots reaching slightly above scape bases, rounded to orbits. Clypeus (CL:CW 1.40, CB:CO 1.00) surface finely reticulate shagreen with sparse shallow punctate pits, silky-shiny; anterior margin horn-brown. Supraclypeal area half white, strongly narrowed above, apex with raised lateral edge, gradually

merging into frons. Scape fields shagreen, frons otherwise strongly subcontiguously wrinkly-punctate, lateral dots coarser, surface shiny. Vertex highly convex, merging posteriorly into wrinkles. Sides of face convex, not depressed, with rounded paraocular margin. Genae narrow, longitudinally wrinkled and furrowed, punctate. Malae narrow, but distinct. Occiput rounded. Labrum and mandibles white.

Mesosoma (Fig. 18) normal, black, only below with sparse short white pubescence. Only tegulae with white spots; pronotum and calli black. Pronotum very short, with sharp upper edges, laterally rounded. Mesonotum, scutellum and mesopleura dull shagreen with fine close punctation. Omauli rounded. Legs black; tibiae I anteriorly, II and III basally broadly and apically less strongly white margined; basitarsi and other tarsomeres entirely white. Wing membranes clear; stigma, costa and veins light brown. Basal part of propodeum long, distally with sharp transverse edge. Basal area with coarse wrinkled meshes, interspaces shiny. Basal, lateral and terminal areae separated from each other by upturned sharp ridges. Median furrow of terminal area narrow.

Metasoma (Fig. 27) slender and elongate, black. Tergum 1 shagreen, with fine dense punctation, finer than on mesonotum; without lateral fringes. Following terga more finely and shallowly punctate, silky. Depressions not demarcated, pale. Sterna flat. Terminalia Fig. 36. Lobes of sternum 7 with only one larger bristle/lamella, lobes almost parallel, distal lobe long, with setae without bristles; proximal lobe spoon-like. Sternum 8 distally blunt; basally with spiculum somewhat elongated. Genital capsule short and compact, gonoforcipes apically short and blunt, with few long bristles. Penis valves viewed as a pair broad, as long as gonoforcipes.

Type material. ***Holotype*** ♂ (single specimen), ETHIOPIA: Sidamo prov., ca. 50 km NE Mega, 1420 m alt., 24.IV.2007, J. Halada leg.; coll. OLML.

Etymology. Named after the comparatively fine punctation; διαστικτος (Greek) – finely dotted, speckled (adjectival).

Hylaeus (*Deranchylaeus*) *tenuis* (Alfken, 1914)

Prosopis simplex Bingham, 1912: 381–382. 1 ♀. South Africa. Holotype UMO. – Secondary homonym in *Hylaeus* of *Nesoprosopis simplex* Perkins, 1899.

Prosopis tenuis Alfken, 1914: 188–189. ♀♂, South Africa. Lectotype ♂ ZMB Berlin.

Hylaeus (*Deranchylaeus*) *tenuis* (Alfken): Dathe (2014: 12).

Remarks. This species is treated in detail by Dathe (2014: 12, 69–71), including its synonymy. It belongs to the complex comprising the above-mentioned species and appears in the identification key, although the female does not have orange facial markings. It has small comma-shaped facial spots on the orbits at the level of scape bases. The male mask is ivory white, the supraclypeal area is often quite black and the scapes are slim. Tergum 1 is shagreen and very finely punctate. Nevertheless, this taxon should be mentioned here; Fig. 40 shows in more detail the structure of the male sternum 7 for comparison with the other species.

New records. KENYA: 1 ♂, SE Voi, 18.V.2007, M. Halada leg. – SOUTH AFRICA: 1 ♂, KwaZulu Natal N, Tembe Elephant Park, 08.XII.2002, M. Halada leg. – TANZANIA: 1 ♂, Arusha distr., Naberera env., 08–13. IV.1997, M. Kuboň leg.

Hylaeus (*Deranchylaeus*) *jemeniticus* sp. nov.

https://zoobank.org/2B32A4E9-BDB1-488D-B3C2-F6816D8F9A09

Diagnosis. Females with an orange clypeus were not previously known to me from the Palaearctic. This species apparently has a close connection with geographically neighbouring Ethiopian species (e.g. *H. portokalius*). The male is unknown.

Description. Female. N = 1. Total length 4.40 mm, wing length 3.00 mm.

Head (Fig. 51) outline round trapezoidal, HL:HW 0.96, UFW:LFW 1.55; hairy only distally. Scapes long and slender, brown streaked below, flagella short, yellow below, black above. Foveae faciales moderately long. Mask rusty brown: except for lower part of clypeus, mouthparts and lower border of compound eyes also orange. Clypeus CL:CW 1.28, BW:DO 1.31; area shagreen with fine sparse punctation, silky-glossy; sculpture merging into supraclypeal area without border; its apex with median furrow, gradually and broadly merging into frons. Frons flat, but moderately subcontiguously punctate, satiny. Vertex convex, more shallowly and indistinctly punctate, not very shiny. Facial sides evenly convex, with angular paraocular margin. Genae narrow, longitudinally striate-punctate. Malae narrow. Occiput rounded. Labrum and mandibles yellow.

Mesosoma (Fig. 57) normal, black, ventrally and laterally with short sparse white pubescence. White spots only on tegulae, calli and pronotum black. Pronotum with sharp anterior edges, sides angularly protruded. Mesonotum and scutellum dull, shagreen, with moderately close punctation, omauli rounded. Mesopleura more finely and scattered punctate. Legs entirely black. Wings clear, with stigma, costa and veins black. Propodeum sharp-edged; horizontal part of medial area with a row of meshes, basally with fine, distally with coarse sharp-edged meshes, interspaces shining. Terminal area circular with sharp bar, medial furrow funnel-shaped, smooth, sculptured and dull above. Lateral areae sharply bordered posteriorly and laterally, with short white pinnae.

Metasoma (Fig. 63) spindle-shaped, black. Tergum 1 shagreen, with minute dense punctation; following terga more finely sculptured, punctation barely visible; depressions not well defined. Without lateral fringes. Terminal fringe pale.

Type material. ***Holotype*** ♀ (single specimen), YEMEN SW: 20 km S Taizz, 13°30'N, 43°57'E, 1200 m alt., 24.X.2005, J. Halada leg.; coll. OLML.

Etymology. Named after the country of origin Yemen (adjectival).

New records of species of the genus *Hylaeus* F. in sub-Saharan Africa

Subgenus *Alfkenylaeus* Snelling, 1985

***Hylaeus* (*Alfkenylaeus*) *arnoldi* (Friese, 1913)**

Prosopis arnoldi Friese 1913: 574. ♂, Zimbabwe. Holotype ZMB.
Hylaeus (incertae sedis) *arnoldi* (Friese) – Snelling (1985: 18).
Hylaeus (*Alfkenylaeus*) *arnoldi* (Friese) – Dathe (2015: 13).

Distribution. Botswana, Kenya, Mozambique, Namibia, Zimbabwe. New to ETHIOPIA: 1 ♀, Sof Umer, 06°54'N, 40°51'E, 1200 m alt., 30–31.V.2025 J. Halada leg.

***Hylaeus* (*Alfkenylaeus*) *acariphorus* Snelling, 1985**

Hylaeus (*Alfkenylaeus*) *acariphorus* Snelling, 1985: 14. ♂♀, Zimbabwe. Holotype ♂, SAM Cape Town – Dathe (2015: 13).

Distribution. Ethiopia, Kenya, Mozambique, Zimbabwe, South Africa. Supplementary records: ETHIOPIA: 8 ♂♂, Sof Umer, 06°54'N, 40°51'E, 1200 m alt., 30–31.V.2025, J. Halada leg.

Subgenus *Cornylaeus* Snelling, 1985

***Hylaeus* (*Cornylaeus*) *aterrimus* (Friese, 1911)**

Prosopis aterrima Friese, 1911: 127. ♂♀, South Africa. Lectotype ♂ ZMB.
Hylaeus (*Cornylaeus*) *aterrimus* (Friese) – Snelling (1985: 10). Dathe (2015: 15).

Distribution. Hitherto recorded from Congo Republic, Mozambique, South Africa and Zimbabwe. New to ZAMBIA: 4 ♂♂, 50 km E Mwinilunga, 11°43'S, 24°47'E, 1400 m alt., 18.X.2008; 1 ♂, 40 km W Chingola, 12°27'S, 27°35'E, 1200 m alt., 07.XI.2005; 2 ♂♂, 1 ♀, 100 km W Solwezi, 12°13'S, 25°39'E, 1400 m alt., 10.XI.2005; all M. Halada leg. Supplementary records: MOZAMBIQUE: 1 ♀, 65 km S Vlóngné, 15°13'S, 34°19'E, 1250 m alt., 08.XII.2005, Kadlecová leg.; 1 ♀, Tete prov., ca. 65 km S Ulongue, 08–10.XII.2005, A. Kudrna leg.

Subgenus *Metylaeus* Bridwell, 1919

***Hylaeus* (*Metylaeus*) *bouyssoui* (Vachal, 1899)**

Prosopis bouyssoui Vachal, 1900: 535. ♀, Gabon. Lectotype ♀ MNHN Paris.
Hylaeus (*Metylaeus*) *cribratus* (Bridwell) – Snelling (1985: 22).

First record for Congo. CONGO: 1 ♀, Sangha prov., 7 km SW Mokéko, 01°30'N, 15°55'E, 420 m alt., 31.X.2016, J. Halada leg.

***Hylaeus* (*Metylaeus*) *cribratus* (Bridwell, 1919)**

Metylaeus cribratus Bridwell, 1919: 131. ♀♂, Nigeria. Holotype ♂ BPBM Honolulu.
Hylaeus (*Metylaeus*) *cribratus* (Bridwell) – Snelling (1985: 22). – Dathe (2015: 21).

Distribution. Widespread and relatively common species; recorded from Angola, Benin, Botswana, Burkina Faso, DR Congo, Ethiopia, Gabon, Cameroon, Kenya, Malawi, Mozambique, Namibia, Nigeria, South Africa, Uganda and Zimbabwe. New for the Republic of CONGO: 1 ♀, Plateaux prov., Gamboma env., 01°53'S. 15°51'E, 300 m alt., 22.X.2016, J. Halada leg. – ZAMBIA: 4 ♂♂, 40 km W Chingola, 12°27'S, 27°35'E, 1200 m alt., 07.XI.2005; 1 ♀, 140 km NE Kapiri Moshi, 13°31'S, 29°48'E, 1500 m alt., 23.XI.2005, all M. Halada leg. Supplementary records: ETHIOPIA: 3 ♂♂, Sof Umer, 06°54'N, 40°51'E, 1200 m alt., 30–31.V.2025, J. Halada leg.; 1 ♀ Oromia State, Borena Region, 10 km SE Negele env., 14°18'N, 39°38'E, 1470 m alt., 19.XI.2014, P. Kučera leg. – KENYA: 1 ♂ Voi, 16.V.2005; 1 ♂ E of Thika, SW Kangonde, 28.XII.2007, M. Halada leg. – TANZANIA: 1 ♀ Dodoma prov., 30 km E Dodoma, 05°54'S, 35°45'E, 1100 m alt., 14.12.2006, J. Halada leg.; 3 ♂♂ Morogoro prov., 50 km SW Morogoro, 06°50'S, 37°15'E, 450 m alt., 12.I.2007, J. Halada leg. – MOZAMBIQUE: 1 ♂ 15 km SSE Manje, 15°29'S, 23°16'E, 500 m alt., 02–04.XII.2005; 1 ♂ 15 km SE Save, 21°13'S, 34°40'E, 65 m alt., 18–19.XII.2005, both J. Halada leg.

***Hylaeus* (*Metylaeus*) *scutispinus* (Alfken, 1914)**

Prosopis scutispina Alfken, 1914: 195. 1 ♂, Zimbabwe. Holotype ZMB.
Hylaeus (*Metylaeus*) *scutispinus* (Alfken) – Snelling (1985: 26). – Dathe (2015: 22).

Distribution. Benin, Botswana, Burkina Faso, Central African Republic, Kenya, Malawi, Mozambique, Namibia, South Africa, Zimbabwe. – New to SENEGAL: 3 ♂♂, 20 ♀♀, 70 km W Tambacounda, 13°57'N, 14°16'W, 29.VI.2004, M. Halada leg.

Subgenus *Pumilaeus* Dathe, 2015

***Hylaeus* (*Pumilaeus*) *soukontouai* sp. nov.**

https://zoobank.org/4F5144CD-CD8A-464F-B466-6D686169470D

Diagnosis. This dainty species from West Africa is well recognisable by its distinct tricolouration; the curious arolia (pulvilli) deserve mention as conspicuously shiny white structures, from which one might suppose a special hitherto unknown function.

Description. Male. N = 2. Total length 4.25–4.60 mm, wing length 3.00 mm.

Head (Fig. 64) long trapezoidal; HL:HW 1.07–1.10 (1.08), UFW:LFW 1.53–1.57 (1.55); scarcely hairy.

Scapes slender, short, little dilated ScL:ScW 1.80–1.86 (1.83); yellowishwhite, brown streaked above. Flagella of medium length, pale yellow, brown above. Foveae faciales distinct, on vertex, converging. Mask complete, ivory: lateral spots reaching vertex above, tapering to orbits. Clypeus CL:CW 1.80–1.86 (1.70), BW:DO 0.93–0.96 (0.94); median longitudinally depressed, impression smooth; surface otherwise longitudinally wrinkled with elongate punctation, silky glossy; anterior margin hornbrown. Supraclypeal area with similar sculpture, also depressed ventrally; rounded above; apex flat in profile, not raised from frons and not set off. Frons with subcontiguous coarse punctation, shiny. Vertex shallowly convex, posterior margin shagreen, not very shiny. Occiput rounded. Facial sides increasingly set off downwards, with rounded paraocular margin. Genae narrow, longitudinally wrinkled furrowed and punctate, white pubescent. Malae conspicuously long, slightly shorter than wide. Labrum white, mandibles brown.

Mesosoma (Figs 65, 66) normal, especially below with sparse white pubescence. Pronotum entirely orange, mesonotum coloured to middle, with white spots on pronoturn, calli and tegulae. Pronotum protruding, rounded laterally. Mesonotum and scutellum shagreen with strong dense punctation. Mesopleura slightly more finely and shallowly punctate, silky; omauli rounded. Legs yellow; tibiae I and II anteriorly, III basally broadly and apically more narrowly white margined; basitarsi and other tarsi white, terminal tarsomere with conspicuously developed white arolium (Fig. 67), claws with black tip. Wings clear, strongly iridescent; with stigma, costa and veins light brown. Horizontal part of propodeum long, surface with coarse wrinkled meshes, interspaces shiny. Terminal area ventrally and laterally with sharp ridges, finely sculptured, dull, hairy. Lateral areae posteriorly not delimited.

Metasoma (Figs 65, 66) slender, long elliptic; basally orange, otherwise black. Tergum 1 shagreen, densely but moderately punctate, shiny; white lateral fringes narrow, but distinct. Following terga more finely and shallowly punctate. Depressions paler, with sparse white ciliate bands. Sterna flat, without distinctive characters. Terminalia (Fig. 37): distal lobes of sternum 7 forming large round membrane; proximal lobes smaller, elliptic, with fine marginal bristles. Sternum 8 with bipartite apical process, margin with short row of bristles. Genital capsule short and compact, widening distally in outline; gonoforcipes depressed apically, with long bristles on margin. Penis valves with rhombic outline in dorsal view.

Type material. ***Holotype*** ♂, CAMEROON: Meiganga, 06°33'N, 14°15'E, 1103 m alt., 08.I.2016, Y. B. Soukontoua leg., coll. IRSNB. – Paratype 1 ♂, same data, coll. SDEI.

Etymology. Named after the collector of the species, Yves Bertrand Soukontoua (Ngaoundéré, Cameroon and Ghent, Belgium), latinised.

Flower visitation. Collected on *Lophira lanceolata* (dwarf red ironwood, family Ochnaceae).

Remarks. This species does not readily fit into any of the better-known indigenous subgenera. The subgenus *Deranchylaeus* is, however, avowedly a repository for otherwise unassignable African species (Snelling 1985), but in my opinion, there should also be positive characters, which I cannot recognise in *Deranchylaeus*. Rather, there seem to be some parallels in the structure of the terminalia to *Pumilaeus* species, such as the recently-described *Hylaeus* (*Pumilaeus*) *pumilus* Dathe, 2015 from Cameroon (Mindif N).

They share the membranous distal lobes of sternum 7, the apically bipartite sternum 8 and the compact genital capsule with the penis valves flat on top; the scapes are brightly coloured and the terga have terminal fringes. Interestingly, these characters are equally found in a species from Oman, which I recently described as *H.* (*Paraprosopis*) *samhanicus* Dathe, 2022. Similarities between the fauna of the north-eastern Afrotropics and that of the Arabian Peninsula are known ("Ethiopian Region"), but some more data would be needed before a species from West African Cameroon could be assigned to this distributional type.

Subgenus *Deranchylaeus* Bridwell, 1919

Hylaeus (*Deranchylaeus*) *alfkeni* (Friese, 1913)

Prosopis alfkeni Friese, 1913: 35, 583. ♂, Zimbabwe. Lectotype ZMB Berlin.

Hylaeus (*Deranchylaeus*) *alfkeni* (Friese, 1913) – Bridwell (1919: 139); Dathe (2014: 23).

New records. NAMIBIA: 1 ♂, Kunene, 50 km NEE Khorixas, 20°51'S, 15°25'E, 1133 m alt., 24.III.2017; 1 ♂, 1 ♀, Karas, 80 km N Aus, 26°05'S, 16°37'E, 1550 m alt., 01.IV.2017, J. Halada leg.

Hylaeus (*Deranchylaeus*) *amharicus* Dathe, 2014

Hylaeus (*Deranchylaeus*) *amharicus* Dathe, 2014: 25. ♀, Ethiopia. Holotype IRSN Brussels.

New records. ETHIOPIA: 2 ♀♀, Holeta Station, 9°04'N, 38°30'E, 2450 m alt., 07.V. and 17.IX.2012, Zewdu & Pauly leg.

Hylaeus (*Deranchylaeus*) *capicola* (Alfken, 1914)

Prosopis capicola Alfken, 1914: 186. 1 ♀, South Africa. Holotype ZMB Berlin.

Hylaeus (*Deranchylaeus*) *capicola* (Alfken, 1914) – Bridwell (1919: 141); Dathe (2014: 29).

New records. SOUTH AFRICA: 1 ♂, Maputoland, SW of Emanguzi, 29.I.2003, K. Snižek leg. – SIMBABWE: 1 ♂, Manicaland prov., Chirinda Forest Res., Mt. Selinda, 20°25'S, 32°43'E, 1000 m alt., 02–06.XII.2015, J. Halada leg. First record for Simbabwe.

Figures 64–67. *Hylaeus* (*Pumilaeus*) *soukontouai* sp. nov., male. **64.** Head, frontal view; **65.** Habitus, lateral view; **66.** Habitus, dorsal view; **67.** Claw limb with white arolium, below in ventral view. Scale bar 1 mm.

Hylaeus (*Deranchylaeus*) *chimani* Dathe, 2014

Hylaeus (*Deranchylaeus*) *chimani* Dathe, 2014: 31. ♂, Zimbabwe. Holotype SDEI.

Distribution. Previously only known from Zimbabwe. New for TANZANIA: 1 ♂, Manyara prov., Mts Hanag, 30 km SW Babali, 04°23'S, 35°25'E, 2000 m alt., 12.XII.2017; 1 ♂, Mbeya prov., Mbeya City, 05.I.2007, both J. Halada leg.

Hylaeus (*Deranchylaeus*) *curvicarinatus* (Cameron, 1905)

Prosopis curvicarianata Cameron, 1905: 234. ♂, South Africa. Lectotype NHM London.

Hylaeus (*Deranchylaeus*) *curvicarinatus* (Cameron, 1905) – Bridwell (1919: 136); Dathe (2014: 34).

New records. SOUTH AFRICA: 2 ♂♂, 2 ♀♀, Cape prov., 25 km N Jansenville, 32°49'S, 24°44'E, 600 m alt., 04.I.2010. – NAMIBIA: 3 ♂♂, Karas, 80 km N Aus, 26°05'S, 16°37'E, 1550 m alt., 01.IV.2017, J. Halada leg. First record for Namibia.

Hylaeus (*Deranchylaeus*) *dregei* (Strand, 1912)

Prosopis dregei Strand, 1912: 27. 1 ♂, South Africa. Holotype ZMB Berlin.

Hylaeus (*Deranchylaeus*) *dregei* (Strand, 1912) – Bridwell (1919: 137); Dathe (2014: 36).

New records. SOUTH AFRICA: 1 ♀, East Cape, 10 km SE Alexandria, Nat. Res., 28–31.I.2000, J. Halada leg.

Hylaeus (*Deranchylaeus*) *eardleyi* Dathe, 2014

Hylaeus (*Deranchylaeus*) *eardleyi* Dathe, 2014: 37. ♂♀ South Africa. Holotype ♂ SANC Pretoria.

Distribution. Ethiopia, Kenya, Mozambique, Zimbabwe, South Africa. New records MOZAMBIQUE: 4 ♂♂, 8 km SW Vila Franca Save, 21.203°S, 34.507°E, 24.II.2020, M. Halada. – SOUTH AFRICA: 5 ♂♂, 2 ♀♀, KwaZulu Natal, Hluhluwe 4 km S, 28°04'S, 32°17'E, 120 m alt., 20.XII.2019, J. Halada leg.

Hylaeus (*Deranchylaeus*) *gabonicus* (Vachal, 1900)

Prosopis gabonica Vachal, 1900: 536. ♀, Congo. Lectotype MNHN Paris.

Hylaeus (*Deranchylaeus*) *gabonicus* (Vachal, 1900) – Bridwell (1919: 143); Dathe (2014: 39).

New records. CAMEROON: 6 ♂♂, 5 ♀♀, North-West prov., E env. of Big Babanki, 06°07'N, 10°16'E, 1200 m alt., 05–13.III.2008, M. Řiha leg. 7 ♀♀, Meiganga, 6°33'N, 14°15'E, 1103 m alt., 07.VII.– 30.IX.2014; 12 ♂♂, 6 ♀♀, 01–05.I.2016, all Y.B. Soukontoua leg. – ETHIOPIA: 1 ♀, SNNPS State, Arba Minch NP, 06°02'N, 37°35'E, 1180 m alt., 04.IV.2016, J. Halada leg. – CONGO: 1 ♂, Sangha prov., 20 km SW Cabosse, 02°00'N, 13°54'E, 530 m alt., 02.XI.2016; 1 ♀, Plateaux prov., 20 km S Lékana, 02°29'S, 14°37'E, 465 m alt., 08.XI.2016, J. Halada leg. First record for Ethiopia.

Hylaeus (*Deranchylaeus*) *gessianus* Dathe, 2014

Hylaeus (*Deranchylaeus*) *gessianus* Dathe, 2014: 41. ♂♀, Namibia, South Africa. Holotype ♂ Albany Museum, Grahamstown.

Distribution. Namibia, South Africa. New records: NAMIBIA: 2 ♂, Karas prov., 80 km N Aus, 26°05'S, 16°37'E, 1550 m alt., 01.IV.2017, J. Halada leg.; 1 ♀, 15 km E Swakopmund, 04.II.1993, J. Gusenleitner leg.

Hylaeus (*Deranchylaeus*) *haladanius* Dathe, 2015

Hylaeus (*Deranchylaeus*) *haladanius* Dathe, 2015: 12. ♂♀, Burundi. Holotype ♂ IRSNB Brussels.

Distribution. Burundi, Cameroon, Central African Republic, Nigeria, South Africa, Zambia. New records: CAMEROON: 1 ♀, Meiganga, 6°33'N, 14°15'E, 1103 m alt., 18.VIII.2014, Y.B. Soukontoua leg. – CENTRAL AFRICAN REPUBLIC: 1 ♂, 85 km NW Bangui, 04°46'N, 18°04'E, 380 m alt., 04.IV.2010. – NIGERIA: 1 ♀, Gashaga Gumfi NP, 25 km SW Serti env., 07°20'N, 11°13'E, 400 m alt., 09–13.V.2011. – TANZANIA: 1 ♀, Shinyanga prov., 100 km NWW Kahama, 03°25'S, 31°47'E, 1200 m alt., 24.XII.2006. All J. Halada leg. First record for Tanzania.

Hylaeus (*Deranchylaeus*) *leucolippus* (Friese, 1913)

Prosopis leucolippa Friese, 1913: 574. 1 ♂, Namibia. Holotype ZMB Berlin.

Hylaeus (*Deranchylaeus*) *leucolippus* (Friese, 1913) – Bridwell (1919: 145); Dathe (2014: 49).

Distribution. Namibia, South Africa, Zimbabwe. New records: NAMIBIA: 1 ♂, Erongo Usakos 1–5 km E, 21°58'S, 15°36'E, 900 m alt., 16.III.2014, J. Halada leg.

Hylaeus (*Deranchylaeus*) *lightfooti* Bridwell, 1919

Hylaeus (*Deranchylaeus*) *lightfooti* Bridwell, 1919: 137. ♀♂, South Africa. Holotype ♂ USNM Washington – Dathe (2014: 50).

Distribution. South Africa, Zimbabwe. New records: SOUTH AFRICA: 3 ♂♂, Western Cape, Mossel Bay, route Herbertsdale – Langberg, 19.I.2001; 1 ♂, Western Cape, N of Knysna, Prince Alfreds pass env., 23.I.2001, M. Snižek leg.

Hylaeus (*Deranchylaeus*) *melanosoma* (Cockerell, 1920)

Prosopis melanosoma Cockerell, 1920: 305. ♀♂, South Africa. Holotype ♀ NHM London.

Hylaeus (*Deranchylaeus*) *melanosoma* (Cockerell, 1920) – Dathe (2014: 53).

Distribution. South Africa, Burundi, Zimbabwe. New records: SIMBABWE: 1 ♂, 8 ♀♀, Manicaland prov., Chirinda Forest Res., Mt. Selinda, 20°25'S, 32°43'E, 1000 m alt., 04.XII.2015, J. Halada leg. – UGANDA: 1 ♀, W Kasese, 10 km Kilembe, 1800 m alt., 21.XI.1994, M. Snižek leg. First record for Uganda.

Hylaeus (*Deranchylaeus*) *oromialis* Dathe, 2014

Hylaeus (*Deranchylaeus*) *oromialis* Dathe, 2014: 56. ♂♀, Ethiopia. Holotype ♂ IRSN Brussels.

Distribution. BURUNDI: 3 ♀♀, PN Kibira, 2°55'S, 29°30'E, 2200 m alt., 04–08.VIII.2014, A. Mpawenimana leg.; 1 ♀, ibid., Mt. Teza, 03°16'S, 29°33'E, 2400 m alt., 1 f+, ibid., Sec Rwegura, 02°5"S, 29°30'E, 2400 m alt., both 01–17.VII.2015, L. Ndayikeza leg. – ETHIOPIA: 1 ♂, Holeta Station, 9°04'N, 38°30'E, 2450 m alt., 09.X.2012, Zewdu & Pauly leg. First record for Burundi.

Hylaeus (*Deranchylaeus*) *perater* Cockerell, 1936

Prosopis perater Cockerell, 1936: 4. ♀♂, Congo. Holotype ♀ AMNH New York.

Hylaeus (*Deranchylaeus*) *perater* Cockerell, 1936 – Dathe (2014: 61).

Distribution. Congo, Eritrea, Ethiopia, Kenya, Zimbabwe. New records: BURUNDI: 1 ♂, PN Kibira, Sec Rwegura, 02°55'S, 29°30'E, 2200 m alt, 17–21.VII.2015, L. Ndayikeza leg. – ETHIOPIA, 1 ♀, Holeta Station, 9°04'N, 38°30'E, 2450 m alt., 06.II.2012; 1 ♂, ibid., 28.IV.2012; 4 ♀♀, ibid., 08–15.V.2012; 1 ♀, ibid., 08.IX.2012; 3 ♀♀, ibid., 09–15.IX.2012; 1 ♀, ibid., 16–30.X.2012; 1 ♀, ibid., 06.XI.2012; all Zewdu & Pauly leg. 2 ♀♀, Oromia, Ghedo, 9°01'N, 37°27'E, 2400 m alt., 01–30.XI.2013, Hora & Pauly leg. – UGANDA: 1 ♀, W Kasese, 10 km Kilembe, 1800 m alt., 21.XI.1994, M. Snižek leg. First record for Burundi and Uganda.

Hylaeus (*Deranchylaeus*) *robertianus* (Cameron, 1906)

Prosopis robertiana Cameron, 1906: 324. ♂, South Africa. Holotype NHM London.

Hylaeus (*Deranchylaeus*) *robertianus* (Cameron, 1906) – Dathe (2014: 64).

Distribution. Kenya, Tanzania, Burundi, Malawi, Zimbabwe, South Africa. New records: CENTRAL AFRICAN REPUBLIC: 1 ♀, 40 km E Bambio, 03°60'N, 17°12'E, 500 m alt., 09.XI.2012; 1 ♀, 32 km NW Mbaiki, 21–22.XI.2012. – CONGO: 1 ♀, Plateaux prov., Gamboma env., 01°54'S, 15°51'E, 300 m alt., 22.X.2016; all J. Halada leg. – ETHIOPIA: 1 ♀, Gamo Gofa prov., 45 km S Arba Minch, 1200 m alt., 15.IV.2007, J. Halada. – SOUTH AFRICA: 1 ♂, Pretoria City, 12.II.2000, J. Halada leg; 1 ♂, Western Cape, K Karoo mer., Langberg env., 24.XI.2002, M. Snižek leg. – TANZANIA: 1 ♀, Mbeya prov., 20 km S Vwawa, 09°12'S, 33°04'E, 1880 m alt., 07.XII.2017, J. Halada leg. – ZAMBIA: 2 ♀, W of Solwezi, 12°10'S, 25°33'E, 1300 m alt., 22.X.2008, M. Halada; 1 ♀, 90 km Solwezi, E of Chisasa, 09.IX.2005, M. Snížek. New to Ethiopia, Congo and Zambia.

Hylaeus (*Deranchylaeus*) *rugipunctus* (Alfken, 1914)

Prosopis rugipuncta Alfken, 1914: 192. ♀♂, South Africa. Lectotype ♂ ZMB.

Hylaeus (*Deranchylaeus*) *rugipunctus* (Alfken, 1914) – Dathe (2014: 67).

Distribution. Uganda, South Africa, Namibia. New records: SENEGAL: 1 ♂, 70 km W Tambacounda, 13°58'N, 14°16'W, 29.VI.2004, M. Halada leg. – SOUTH AFRICA: 1 ♀, Western Cape, N of Cape Town, 33°46'S, 18°23'E, 70 m alt., 07.XII.2007, M. Riha leg.; 1 ♀, Limpopo prov., Waterberg BR, Marken env., 23°36'S, 28°23'E, 10 m alt., 26.XI.–15.XII.2015, J. Halada leg. First record for Senegal.

Hylaeus (*Deranchylaeus*) *tinctulus* Cockerell, 1932

Hylaeus tinctulus Cockerell, 1932: 172. ♂♀, Congo. Holotype ♂ NHM London.

Hylaeus (*Deranchylaeus*) *tinctulus* Cockerell, 1932 – Dathe (2014: 71).

Distribution. Congo, Burundi. New records: BURUNDI: 1 ♀, PN Kibira, Mt. Teza, 03°16'S, 29°33'E, 2400 m alt., 02–13.II.2015; 3 ♀, ibid., 02–13.III.2015; 2 ♀♀, 16–31.III.2015; 1 ♀, 18.IV.2015; 1 ♂, 3 ♀♀, ibid., 03–27.V.2015; 1 ♀, ibid., 01–12.06.2015. 2 ♂♂, PN Kibira, Sec Rwegura, 2°55'S, 29°30'E, 2200 m alt., 01–17.X.2014; 2 ♂♂, ibid., 10–28.XI.2014; 1 ♂, 1 ♀, ibid., 01–31.XII.2014; 2 ♂, 3 ♀, ibid., 01–27.II.2015; 1 ♂, 5 ♀♀, ibid., 02–13.III.2015; 2 ♀♀, ibid., 01–17.IV.2015; 2 ♂♂, 1 ♀, ibid., 04–31.V.2015; 4 ♂♂, 1 ♀, ibid., 01–30.VI.2015; 1 ♂, 4 ♀♀, ibid., 01–30.VII.2015. 1 ♀, PN Kibira, Secteur Muremera, 03°03'S, 30°30'E, 1654 m alt., 23–27.II.2015. 1 ♂, PN Kibira, Secteur Teza, 3°33'S, 29°32'E, 2342 m alt., 08.III.2015. All L. Ndayikeza leg. – CAMEROON: 1 ♂, North-West prov., Kefen Forest, 6 km E Bambui, 06°02'N, 10°17'E, 1800 m alt., 13–14.III.2008, M. Řiha leg. – TANZANIA: 1 ♂, Manyara prov., Mts Hanag, 04°25'S, 35°25'E, 2000 m alt., 12.XII.2017, J. Halada leg. – UGANDA: 1 ♂, Kisoro prov., 10 km E from Kisoro, primeval forest, 01°15'S, 29°47'E, 2277 m alt., 02.II.2016; 1 ♀, Kabale prov., Kashasha, primeval forest, 01°16'S, 29°49'E, 2485 m alt., 03.II.2016, both F. Černý leg. – ZIMBABWE: 1 ♂, Manicaland prov., Chirinda Forest Res., Mt. Selinda, 20°2"S, 32°43'E, 1000 m alt., 02–06.XII.2015, J. Halada leg. First records for Cameroon, Zimbabwe, Tanzania and Uganda.

Subgenus *Paraprosopis* Popov, 1939

Hylaeus (*Paraprosopis*) *taeniolatus* Förster, 1871

Hylaeus taeniolatus Förster, 1871: 1068. ♀, Italy: Sicily. Syntypes NHM London.

Hylaeus (*Paraprosopis*) *taeniolatus* Förster, 1871 – Dathe (1996: 18).

One single record. SIMBABWE: 1 ♀, E Chrirında Forest Land, Mt. Selinda, 26.I.1998, M. Halada leg. This Palaearctic species is distributed mainly in the Mediterranean Region and common there. Probably the specimen is introduced (or mistakenly labelled).

Subgenus *Prosopis* Fabricius, 1804

Hylaeus (*Prosopis*) *albonotatus* (Walker, 1871)

Prosopis albonotata Walker, 1871: 40. ♂♀, Egypt: Cairo; Djibuti: Tadjoura. Lectotype ♂ NHM London.

Hylaeus (*Prosopis*) *albonotatus* (Walker, 1871) – Dathe (1995: 157; 2009: 339).

Distribution. The species is widespread and usually not rare. It occurs mainly in West Asia and has been frequently collected in Iran, Jordan, Israel and the Arabian Peninsula (Saudi Arabia, UAE, Oman, Yemen). African occurrences are documented from Morocco, Tunisia and Egypt, but also from Central and West Africa (Djibouti [locus typicus], Chad, Niger and Mauritania).

Here it is registered as new to SENEGAL: 26 ♂, 1 ♀, 70 km W Tambacounda, 13°58'N, 14°16'W, 29.VI.2004, M. Halada leg.

Identification keys to species of the *Hylaeus* subgenus *Deranchylaeus*
(including *Hylaeus* (*Pumilaeus*) *soukontouai* sp. nov., male)

These keys completely replace the previously provided keys of the subgenus *Deranchylaeus* and their update in Dathe (2014: 15–18, 2015: 21). It contains the new species, as well as corrections and new findings since then. Nevertheless, it is recommended to also consult the earlier keys in order to obtain image references that cannot be reprinted here. Figures in square brackets refer to figures in Dathe (2014).

However, the keys have been compiled partly on the basis of a comparatively small amount of material from few localities and may, therefore, not allow for the full range of variability of the species throughout their very large distribution areas.

To optimise the practical applicability of the keys, terminalia characters have been largely omitted. Nevertheless, examination of the terminal structures to validate the identification results is strongly recommended. It is also advisable

to refer to the illustrations of the earlier keys, which cannot be reproduced here again. Species characters listed after a long hyphen (—) serve as an additional check on the identification result.

H. soukontouai sp. nov. is tentatively added here, although the species is assigned to a separate subgenus *Pumilaeus*.

Males

1 Large robust species of 5.0–6.5 mm total length; metasoma compact, broad at base, outline oval; integument strongly and densely punctate; face with white spots **2**

– Small dainty species with 3.0–5.5 mm total length; metasoma usually elongated and narrow, spindle-shaped in outline; if larger specimens, metasoma finely shagreen and/or face all black **5**

• ***Larger species***

2 Face with normal outline, lower part slightly curved; mask yellow or white, clypeus convex; tergum 1 strongly and densely punctate, almost without intervals between punctures; only on margin of terga with fine punctation; sterna flat **3**

– Face broad and flat, outline converging in a straight line below [70]; mask ivory white; clypeus with shallow longitudinal impression; tergum 1 densely punctate [71], intervals narrow (about 0.5 to 1 puncture diameter), surface finely netted, silky-shiny; sterna 3 and 4 with paired cusps. — Scapes asymmetrically oval, barely expanded, matt ***H. (D.) dregei* (Strand, 1912)**

3 Scapes apically flattened, the expansion smooth and shiny [92]; integument of tergum 1 smooth, shiny. Small specimens can run in the key to *H. curvicarinatus*, but differ significantly in the structure of the scapes. ***H. (D.) krebsianus* (Strand, 1912)**

– Scapes not flattened, spindle-shaped, slightly shining; integument of tergum 1 finely sculptured, not smooth **4**

4 Integument of tergum 1 shagreen, matt [87]; pronotum slightly extended forward, black ***H. (D.) haygoodi* Bridwell, 1919**

– Integument of tergum 1 finely striate, shiny [133]; pronotum narrow, with white lines. Small specimens may run to couplet 8 ***H. (D.) rugipunctus* (Alfken, 1914)**

• ***Smaller species***

5 Face, especially malae, conspicuously long; mesonotum and tergum 1 orange red; claws with widened white arolia (Figs 64–67) ***Hylaeus (Pumilaeus) soukontouai* sp. nov.**

– Face with normal proportions, malae narrow; mesonotum and tergum 1 black; arolia narrow, brown **6**

6 Tergum 1 with strong, dense punctation; integument often smooth and shiny; when shagreen, then punctation very dense, intervals up to a maximum of one puncture diameter **7**

– Tergum 1 impunctate or with fine or medium, but scattered punctation on shagreen surface; intervals exceeding one puncture diameter **13**

• ***Tergum 1 strongly punctate***

7 Terga 1 and 2 extremely coarsely and densely punctate; surface smooth and very shiny [47]; margins with narrow white, felty bands; scapes small, slender [46] ***H. (D.) alfkeni* (Friese, 1913)**

– Tergum 1 strongly and densely punctate, but punctation much smaller; tergum 2 something finer punctate; surface smooth or finely shagreen; margins usually without distinct bands; scapes slender, cylindrical or conical **8**

8 Tergum 1 strongly and contiguously punctate, with virtually no interspaces; punctation of terga margins finer [133]; punctation of tergum 1 and mesonotum similar; face wide, with light yellow mask, supraclypeal area often black [132] ***H. (D.) rugipunctus* (Alfken, 1914)**

– Tergum 1 more scattered punctate, intervals of at least half a puncture diameter [53, 97, 99]; punctation of tergum 1 smaller than on mesonotum; face often prolonged, mask yellow or white, mostly with bright supraclypeal area **9**

9 Tergum 1 strongly and very densely, but more finely punctate; intervals smooth and shiny; face round; scapes black; labrum and mandibles dark **10**

– Tergum 1 very densely, but finer punctate; intervals shagreen and silky-shiny; face trapezoid; scapes and mouth parts often bright **11**

10 Frons with projecting white hairs [82]; mask white; paraorbital spots wider above, more or less blunt; posterior margin of mesonotum with white tomentose fringe; tergum 1 apically with white lateral fringes ***H.* (*D.*) *gessianus* Dathe, 2014**

– Frons without projecting white hairs [66]; mask light yellow; paraorbital spots narrow above, often acute; posterior margin of mesonotum without tomentose fringe; tergum 1 apically without distinct lateral fringes ***H.* (*D.*) *curvicarinatus* (Cameron, 1905)**

11 Scapes apically expanded and flattened; labrum, mandibles and scapes black; mask yellowish-white; supraclypeal area narrow, clypeus long [98]; propodeum rounded; punctation of tergum 1 very fine and very dense, the intervals narrow ***H.* (*D.*) *lightfooti* Bridwell, 1919**

– Scapes conical, small, often each with a white stripe; labrum and mandibles pale; supraclypeal area and clypeus of normal proportions [52, 96]; propodeum with sharp lateral edges; punctation of tergum 1 coarser, scattered, with distinctly shagreen intervals **12**

12 Mask yellowish-white; scapes with broad white stripe [96]; labrum and mandibles white; mesonotum coarsely punctate; slightly smaller species, 4.5 mm total length ***H.* (*D.*) *leucolippus* (Friese, 1913)**

– Mask yellow; scapes black [52]; anterior margin of clypeus, labrum and mandibles light brown; mesonotum more finely punctate; larger species, 5.5 mm total length ***H.* (*D.*) *bernhardi* Dathe, 2014**

• ***Tergum 1 finely punctate***

13 Mesosoma with coarse punctation (Figs 10–12, 15); mesopleura with large, but shallowly impressed pits, whose bottoms are clearly visible **14**

– Mesosoma with moderate to strong punctation (Figs 13, 14, 16–18); mesopleura with smaller and denser punctation **18**

14 Mask yellow or orange, supraclypeal area light spotted or black **15**

– Mask white, supraclypeal area black **17**

15 Mask including supraclypeal area and mouth parts often yellow **16**

– Mask orange, supraclypeal area and mouth parts black (Fig. 3); genital capsule with horseshoe-shaped outline, gonoforcipes narrow, apically long acuminate, with distinct space from narrow penis valves (Fig. 33); sternum 7 with 4 (5) large lamellar bristles on proximal lobes, flag of distal lobes with 2 spikes ***H.* (*D.*) *burundis* sp. nov.**

16 Antenna long, 4th flagellar segment 1.5× as longer as its diameter; punctation of tergum 1 finer (minute) and more scattered (Fig. 20); distal lobes of sternum 7 with 3 larger lamellar bristles, S8 with longer apical, but shorter proximal lobus, gonoforcipes narrow (Fig. 29), penis valves less elevated (Fig. 45) ***H.* (*D.*) *xanthostoma* (Alfken, 1914)**

– Antenna shorter, 4th flagellar segment hardly longer than its diameter (1.1×); punctation of tergum 1 more distinct and denser (sparse) (Fig. 19); sternum 7 in distal lobes with 2 larger lamellar bristles, a short third is set wide apart, S8 with short apical, but longer proximal lobus, gonoforcipes wider (Fig. 28), penis valves more elevated (Fig. 44) ***H.* (*D.*) *aurantiacus* sp. nov.**

17 Lateral edges of pronotum pointed; mesonotum with very coarse punctation (similar to *H. aurantiacus*, Fig. 10); supra-antennal area coarsely punctate, matt; proximal lobes of sternum 7 without bristles, distal lobes formed as a flag without spike ***H.* (*D.*) *haladanius* Dathe, 2015**

– Lateral edges of pronotum only angular; mesonotum with less coarse punctation (Fig. 15); supra-antennal area finely shagreen, shiny; proximal lobes of sternum 7 with 2–3 large lamellar bristles on proximal lobes, flag of distal lobes with 1 spike (Figs 34, 43) ***H.* (*D.*) *sambiensis* sp. nov.**

18 Mask light yellow, dull, punctation indistinct (Fig. 8); legs entirely pale from trochanters, basal antennal segments light yellow. — Genital capsule short and compact, gonoforcipes apically bluntly rounded, with long row of bristles (Figs 35, 41) ***H. (D.) venustus* Dathe, 2014**

– Mask white or yellow with distinct punctation; legs and antennae partly or completely black **19**

19 Scapes expanded, apically wider than following antennal segments **20**

– Scapes slender, apically not wider than following antennal segments **29**

• ***Scapes expanded***

20 Scapes spherically expanded, shiny [120]; head with unusual form: frons retreating, supraclypeal area very narrow and protruding; face without mask, entirely black as in whole animal, at most with small short pale lines on the orbits ***H. (D.) perater* Cockerell, 1936**

– Scapes conically expanded, silky-shiny, with fine punctation; mask present **21**

21 Mask complete, its upper border transversely truncated below antennal bases; supraclypeal area narrow, its baseline only about half as wide as distance from compound eye; clypeus long (CL:CW 1.7–1.8) **22**

– Mask reduced, not forming a line above; supraclypeal area and often clypeus black above; baseline of supraclypeal area slightly wider than half distance from compound eye; clypeus mostly shorter (CL:CW 1.6–1.7) **23**

22 Mask lemon yellow, upper edge forming a slight bow [128] ***H. (D.) robertianus* (Cameron, 1906)**

– Mask white, upper margin running almost horizontally in a jagged line [110] ***H. (D.) oromialis* Dathe, 2014**

23 Paraocular areae completely filled, spots above expanded inwardly, encompassing antennal bases [78]. — Scapes matt apically; propodeal central furrow deeply notched; punctation of tergum 1 very shallow and scattered ***H. (D.) gabonicus* (Vachal, 1900)**

– Paraocular areae either filled or narrow spotted, but spots above not expanded inwardly, usually pointed to orbits **24**

24 Mask reduced to bright parts of clypeus and mostly narrow side spots; legs frequently entirely black **25**

– Mask usually with filling side spots, supraclypeal area may be black; legs with white **26**

25 Larger species, about 5.5 mm total length, with characteristic mask [140]; gonoforcipes apically rounded ***H. (D.) tinctulus* Cockerell, 1932**

– Smaller species, about 5.0 mm total length, mask with white clypeal centre-spot and narrow paraocular stripes at lower areas [54]; gonoforcipes elongate, apically long and narrow ***H. (D.) camerunensis* Dathe, 2014**

26 Scapes small, apically only slightly widened [104]; supraclypeal area black or yellowish-white like mask; tergum 1 finely punctate [105] ***H. (D.) melanosoma* (Cockerell, 1920)**

– Scapes larger, more strongly widened; supraclypeal area black, mask white or yellow; punctation on tergum 1 hardly visible **27**

27 Scapes bubble-shaped, shiny [116]; distal lobes of sternum 7 prolonged, sometimes visible in anal slit ***H. (D.) paulyi* Dathe, 2014**

– Scapes conically expanded, matt [62, 74]; distal lobes of sternum 7 short or prolonged, not visible in anal slit **28**

28 Proximal lobes of sternum 7 with tooth; mask usually yellow [62] ***H. (D.) chimani* Dathe, 2014**

– Proximal lobes of sternum 7 without tooth; mask white or pale yellow [74] ***H. (D.) eardleyi* Dathe, 2014**

• ***Scapes not widened***

29 Labrum and mandibles dark; scapes black, supraclypeal area often black; genital capsule compact, free part of the gonoforceps no longer than the connected base, partly with narrow styli **30**

– Labrum, mandibles and supraclypeal area bright; scapes apically usually pale, supraclypeal area never black; genital capsule usually longer, without styli **31**

30 Tergum 1 with fine and scattered punctation, intervals 2–3 puncture diameters [137]; end margin of tergum 2 hardly depressed; pronotum black, blade-like anteriorly; gonoforcipes without stylus-like extensions, not protruding from anal slit. — Sternum 7 with 3 slender lamellar bristles, flag long, apical third with 2 spikes (Fig. 40) ***H. (D.) tenuis* (Alfken, 1914)**

– Tergum 1 a little more strongly and densely punctate, intervals 0.5–1 puncture diameters [59]; end margin of tergum 2 depressed; pronotum with a yellow stripe, anteriorly not lamellate; gonoforcipes with stylus-like extensions, sometimes protruding from anal slit. — Sternum 7 with hooked distal lobes, flag very short, without spikes ***H. (D.) capicola* (Alfken, 1914)**

31 Mesonotum with moderate dense punctation (Fig. 18), tergum 1 shagreen with clearly visible fine close punctation (Fig. 27); head outline long-trapezoidal, mask white (Fig. 9). Genital capsule short and compact, gonoforcipes apically truncate (Fig. 36) ***H. (D.) diastictus* sp. nov.**

– Mesonotum with strong sparse punctation (Figs 13, 14, 26), tergum 1 shagreen with barely perceptible minute scattered punctation (Figs 22, 23, 25); head outline almost heart-shaped, mask yellow-white or yellow. Genital capsule in outline long oval with more or less tapered gonoforcipes **32**

32 Genital capsule in outline elliptical, distal half of gonoforcipes like shell-shaped quadrants, much longer than the compact penis valves; sternum 7 with 4–6 larger evenly spaced lamellar bristles, the flags of distal lobes without spikes; mask light yellow or white, scapes spotted **33**

– Genital capsule in outline distally tapered, gonoforceps pointed and flattened in distal half, slightly longer than the narrow penis valves; sternum 7 with 4 large lamellar bristles confined to base, the flags of distal lobes are extended into a long bow (lyre shape), apically broadened and with 8–10 spikes; mask light yellow, scapes black with bright tips (Figs 30, 42) ***H. (D.) lyriformis* sp. nov.**

33 Mask white to ivory-white; scapes slender conical, black with white apical patch; mesosoma with strong close punctation; tergum 1 shagreen with minute scattered punctation. Sternum 7 with 5 or 6 strong lamellar bristles (Figs 31, 38) ***H. (D.) promontorii* Meade-Waldo, 1923**

– Mask pale yellow; scapes stout, wider than half their length, with extensive yellow and/or brown markings; tergum 1 with slightly stronger and denser punctation. Sternum 7 with 4 fine lamellar bristles, the outer one short (Figs 32, 39); genital capsule very similar *H. promontorii* ***H. (D.) portokalius* sp. nov.**

Females

1 Clypeus convex or flat in front, without impression **2**

– Clypeus strongly incurved ventrolaterally, with subapical impression usually smooth [44, 45] **27**

2 Tergum 1 with distinct, often dense punctation, integument usually smooth and shiny **3**

– Tergum 1 impunctate or with fine, scattered punctation on shagreen surface **11**

• ***Tergum 1 distinctly punctate***

3 Tergum 2 with only slightly finer punctation than tergum 1; integument smooth and shiny **4**

– Tergum 2 either with clearly finer punctation than tergum 1 or integument not smooth **6**

4 Punctation on terga 1 and 2 strikingly large [49]; paraocular area with small white spots on orbits near foveae [48] ***H. (D.) alfkeni* (Friese, 1913)**

– Punctation on terga 1 and 2 significantly smaller [69, 85, 135]; paraocular area with long, narrow white stripes on orbits **5**

5 Pronotum and clypeus black; smaller species, total length about 5 mm; punctation on tergum 1 throughout about equal in size, towards middle margin hardly finer [85]; posterior margins of pronotum, mesonotum and terga 1 and 2 with white felt bands ***H. (D.) gessianus* Dathe, 2014**

– Pronotum with white stripe; clypeus black, occasionally with white apical spot; larger species, total length about 6 mm; punctation on tergum 1 strong, partially decreasing, towards middle of posterior margin moderate [135]; tergum 1 with large white lateral fringes, tergum 2 with interrupted white terminal band ***H. (D.) rugipunctus* (Alfken, 1914)**

6 Propodeum rounded, medial area at end margin without sharp edge; face black or with stripes; pronotum with bright stripes or black **7**
– Propodeum with sharp lateral edges, medial area clearly marked; paraocular areae with small white spots above orbits [68]; pronotum black ***H. (D.) curvicarinatus* (Cameron, 1905)**

7 Face medially bulging, entirely black; terga 1 and 2 finely and very densely punctate, surface shagreen and matt; body entirely black **8**
– Face medially normal or flat, with pale stripes; terga 1 and 2 with coarser scattered punctation, surfaces shiny; body black or with white marks **9**

8 Larger species, 7–8 mm total length; pronotum striped white anteriorly ***H. (D.) pamelae* Dathe, 2014**
– Smaller species, 5–6 mm total length; pronotum black ***H. (D.) perater* Cockerell, 1936**

9 Pronotum black; propodeum with surface of terminal area punctate, shiny [33]; clypeus often with spot. — Paraocular areae with white stripe on orbits [94] ***H. (D.) krebsianus* (Strand, 1912)**
– Pronotum with white or yellow stripe; propodeum with surface of terminal areae finely shagreen, matt, at most lateral areae punctate; clypeus black or with yellow stripe **10**

10 Pronotum with white line(s); face with three yellow stripes: on paraocular area adjacent to orbits and in middle of clypeus [64]; mesonotum sparsely punctate, shiny ***H. (D.) claviger* (Cockerell, 1936)**
– Pronotum with yellowish line; face with two sometimes abridged stripes on lower facial area at orbits [108]; clypeus black; mesonotum densely punctate, matt ***H. (D.) nottoni* Dathe, 2014**

• ***Tergum 1 finely punctate***

11 Lower part of face yellowish-red, at least parts of clypeus, but usually also mandibles, labrum, malae and lower orbits (Figs 46–51). — Terga 1 and 2 finely shagreen, its minute punctation often hardly recognisable (Figs 58–63) **12**
– Face with white or light-yellow marks or completely black **17**

12 Head and clypeus strikingly long (Fig. 46), HL:HW 1.1, CL:CW 1.22, malae about 1/3 as long as wide; orange colouration also extends to supraclypeal and paraocular areae ***H. (D.) aurantiacus* sp. nov.**
– Head and clypeus shorter (Figs 47–51), malae narrow; orange colouration restricted to clypeus, mouthparts and malae; if the face is sometimes orange beyond that, then punctation of mesonotum finer **13**

13 Mesonotum finely punctate (Figs 56, 57), pleura with distinctly smaller punctation; lateral edges of pronotum at most angular **14**
– Mesonotum coarsely punctate (Figs 53–55), often with large, but shallowly impressed pits particularly on pleurae; lateral edges of pronotum pointed **15**

14 Scapes and legs yellow; mesonotum with fine dense punctation (Figs 50, 56) ***H. (D.) venustus* Dathe, 2014**
– Scapes and legs entirely or predominantly black; mesonotum with moderate close punctation (Figs 51, 57) ***H. (D.) jemeniticus* sp. nov.**

15 Scapes and legs black; mesonotum with dense moderate to strong punctation (Fig. 54); head short, nearly circular (Fig. 48) ***H. (D.) promontorii* Meade-Waldo, 1923**
– Scapes and legs predominantly or entirely orange; punctation of mesonotum coarser or shallower (Figs 53, 55); head longer (Figs 47, 49) **16**

16 Mesonotum with stronger punctation, intervals about 1 puncture diameter (Fig. 53); legs extended black ***H. (D.) xanthostoma* (Alfken, 1914)**
– Mesonotum with finer punctation (Fig. 55); tibiae and tarsi brown ***H. (D.) portokalius* sp. nov.**

17 Face with three lemon-yellow lines along orbits and on clypeus, with yellow stripe on pronotum and spots on calli and tegulae; punctation of mesonotum large and dense, but shallow [35] ***H. (D.) capicola* (Alfken, 1914)**
– Face with only small bright spots, short or narrow stripes or all black; punctation of mesonotum deeper **18**

18 Mesosoma conspicuously coarsely punctate; pronotum distinctly widened, anterior edge sharp, corners pointed [Dathe 2015: figs 15, 16]; face black ***H. (D.) haladanius* Dathe, 2015**
– Mesosoma normally punctate; pronotum slightly widened, anterior margin and corners edged; face with bright stripes or flecks **19**

19 Propodeum terminal area circumscribed by a carina, especially with distinct oblique edge between lateral and terminal areae [3] ***H. (D.) tenuis* (Alfken, 1914)**
– Propodeum terminal area sharply edged only ventrolaterally, lateral areae posteriorly without edge **20**

20 Clypeus vaguely punctate; with shallow punctation, which especially apically seems to decrease below and fade into sculpture [38, 39] **21**
– Clypeus more clearly punctate, with defined punctation, clearly separated from sculpture over whole surface **22**

21 Mesopleura below scrobal groove with angulate front margin; pronotum at sides edged, not bevelled down; face black [56] ***H. (D.) camerunensis* Dathe, 2014**
– Mesopleura with front margins only edged; pronotum sloping down laterally; face with narrow white paraocular stripes [118] ***H. (D.) paulyi* Dathe, 2014**

22 Clypeus shagreen and shallowly punctate; face usually black, rarely with small yellowish-white spots or dashed lines **23**
– Clypeus with fine, but clearly demarcated punctation; face often with paraocular stripes **24**

23 Clypeus in front slightly widened and bent up [40]; supraclypeal area narrowed above [142], frons adjacent to frontal line punctate ***H. (D.) tinctulus* Cockerell, 1932**
– Clypeus in front widened, but not bent up [41]; supraclypeal area wider above [106], frons adjacent to frontal line striated ***H. (D.) melanosoma* (Cockerell, 1920)**

24 Lateral extensions of pronotum horizontal, projecting at a right angle **25**
– Lateral extensions of pronotum sloping, sides inclined downwards ***H. (D.) oromialis* Dathe, 2014**

25 Clypeus laterally convex, densely and strong punctate; paraocular stripes narrow, but can be widened inwards [80]; clypeus sometimes with spot on front edge ***H. (D.) gabonicus* (Vachal, 1900)**
– Clypeus flat, punctation finely dispersed in predominant shagreen; paraocular stripes reduced to small patches [76, 130] **26**

26 Sides of pronotum nearly right-angled [42]; clypeus apically without smooth margin; median furrow of supraclypeal area only distinct in upper part of edged bulge ***H. (D.) eardleyi* Dathe, 2014**
– Sides of pronotum obtuse angled [43]; clypeus apically with narrow smooth margin; median furrow of supraclypeal area reaching into front region of bulge ***H. (D.) robertianus* (Cameron, 1906)**

• ***Clypeus with impression***

27 Impression of clypeus widened upwards, not definitely limited above; larger species; face markings different; pronotum with white lines or black **28**
– Impression of clypeus transversely oval, limited above; smaller species; paraocular area with mostly short white stripes at orbits; pronotum black **30**

28 Impression of clypeus shagreen and punctate, lacklustre, without tubercle in middle; large completely black species ***H. (D.) amharicus* Dathe, 2014**
– Impression of clypeus finely shagreen, impunctate, shiny, with tubercle in the middle; smaller species with at least tegulae and paraocular spots pale **29**

29 Paraocular area with long white stripes at orbits; pronotum with interrupted white line. Outline of head circular; tergum 1 moderately punctate, intervals shagreen, silky-shiny [73] ***H. (D.) dregei* (Strand, 1912)**
– Paraocular area with short white comma-shaped spots at orbits above; pronotum black; head outline trapezoidal; tergum 1 more strongly punctate, intervals smooth and shiny [91] ***H. (D.) izikosalis* Dathe, 2014**

30	Tergum 2 with distinct punctation near posterior margin, integument smooth and shiny; paraocular spots prolonged, almost to middle of clypeus [102]	***H.* (*D.*) *lineaticeps* (Friese, 1913)**
–	Posterior third of tergum 2 impunctate or punctation disappear more or less in shagreen sculpture; paraocular spots usually only short and comma-shaped [88, 100]	**31**
31	Larger, more robust species of 6–7 mm total length; punctation of tergum 1 coarse and contiguous, integument matt; clypeus not subtuberculate above impression [44, 88]	***H.* (*D.*) *haygoodi* Bridwell, 1919**
–	Smaller species of less than 6 mm total length; punctation of tergum 1 strong, but not coarse, integument silky-shiny; clypeus medially subtuberculate above impression [45, 100]	***H.* (*D.*) *lightfooti* Bridwell, 1919**

Discussion

The genus *Hylaeus* is represented in sub-Saharan Africa by 79 known species, which are assigned to six subgenera. Smaller subgenera are *Cornylaeus* Snelling, 1985 with three species, *Alfkenylaeus* Snelling, 1985 with six species, *Metylaeus* Bridwell, 1919 with five species and *Pumilaeus* Dathe, 2015 with two species (Snelling 1985; Dathe 2015). For the most species-rich subgenus *Deranchylaeus* Bridwell, 1919, the studies by Dathe (2014, 2015) and the present work revealed a total of 39 species. From the Arabian subregion of the Afrotropical realm, another species is added here, *H.* (*Deranchylaeus*) *jemeniticus* sp. nov. In a manuscript by Snelling (in litt.) on the subgenus *Nothylaeus* Bridwell, 1919, which was part of his legacy and has not so far been published, 20 species are listed. Two *Metylaeus* and one *Nothylaeus* species have also been recorded from Madagascar, which is a subregion in its own right (Pauly 2001), namely *H.* (*Metylaeus*) *lemuriae* (Benoist, 1946), *H.* (*Metylaeus*) *mahafaly* Hensen, 1987 and *H.* (*Nothylaeus*) *malagassus* (Benoist, 1946). Mention should also be made of an Australian species, *Hylaeus* (*Prosopisteron*) *perhumilis* Cockerell, 1914, which lived at least temporarily in the South African Province of Western Cape (Dathe 2015: 22).

The subfamily Hylaeinae in Africa is completed by a special monotypic genus, *Calloprosopis magnifica* (Cockerell, 1942), which is only documented from higher altitudes in Kenya (Snelling 1985: 28; Michener 2007: 191).

Taking them all together, including the Malagasy species, we currently know 80 species of Hylaeinae in the whole area. This is a comparatively small number compared to the well-studied faunas of Europe with 83 species, Central Asia with 70 species (Dathe and Proshchalykin 2018) or Asia Minor with 86 species (Özbek and Dathe 2020). Obviously, our knowledge of the African bee fauna as a whole is comparatively limited. In this respect, we should not be surprised that even a few more or less haphazardly collected specimens can alter the picture significantly. In my opinion, the cited reviews provide us with a framework that enables a reliable orientation within which further research can and should take place. The real richness of the African fauna will only become apparent on closer inspection, i.e. in systematic studies over large areas and periods of time. According to the consensus opinion of experts, *Hylaeus* species are not frequently encountered in the field in sub-Saharan Africa. It may be necessary to search for them specifically and success will greatly depend on acquiring an understanding of the ecological relationships between the bees, their forage plants and habitats, as well as their phenology.

An interesting lead on connections between sub-Saharan African and Southwest Asian faunas could be found still in another place. A new species from Cameroon, *H. soukontouai* sp. nov., represents presumably a second species of the recently-described subgenus *Pumilaeus* Dathe, 2015. The other described species in this subgenus, *H.* (*Pumilaeus*) *pumilus* Dathe, 2015, also originates from Cameroon. Here, morphological similarities were found to an isolated species from Oman, which I had recently described as *H.* (*Paraprosopis*) *samhanicus* Dathe, 2022. As the example of the newly-discovered *H. soukontouai* in Cameroon shows, every single observation can still provide valuable clues – and raise new and unexpected questions.

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